Cross-linguistic Influence in Third Language Comprehension: an Exploratory Study on the Role of L1 Chinese and L2 English in the Comprehension of L3 French Past Tense

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ABSTRACT

This research investigates cross-linguistic influence in the comprehension of L3 French past tense. It looks at the transfer pattern of 20 native Chinese students who are English majors (from an intact class) in their early acquisition of L3 French passé composé (PC). Data was collected in the form of introspective think-aloud protocol in a comprehension task and retrospective interview immediately afterwards. In addition, a grammar test on English past and perfect tenses was conducted to compare with their understanding of the French PC.

Quantitative data shows that the dominant source of transfer is from English while transfer from Chinese is marginal. As Chinese is a tenseless language, the only type of transfer that originates from Chinese is the system negative transfer in tense and aspect. A significant positive correlation was found between the positive transfer in tense and aspect from English and the scores of test on English past and perfect tenses, and significant negative correlation between negative transfer in tense and aspect with the scores. This implies that the accuracy in the comprehension of French PC is strongly related to the understanding of distinctions between the corresponding English past and perfect tenses. However, the rate of transfer in tense and aspect in the comprehension of French PC has moderate correlation with general English grammar proficiency and no relationship with general L2 proficiency. Nevertheless, the group with high general L2 proficiency significantly out-performed the group with low general L2 proficiency in terms of overall performance in L3 French comprehension.

The qualitative results show that the source of transfer in tense and aspect can be both Chinese and English while English takes the dominance. Transfer from Chinese is manifested in the lack of tense marking in the second round comprehension (translation from French to English). Transfer from English is observed from the carry-over of the English interlanguage tense system in development to the target language. From the reports of 20 participants regarding the choice of tense in the second round comprehension, five potential patterns are generalized by observing the associations between French and English tenses, including temporal adverbial as tense reminder and the influence of the nature of the verb on the use of tense. Generally speaking, most students are not totally aware of what tenses PC is equivalent to in English, which calls for a direct instruction on the comparison between French and English tenses.

ABSTRACT IN CHINESE

摘要

本研究探討的問題是在第三語言法語的過去時態習得中的語際影響。被試是 20 位中國本土英語專業學生，他們在同一個法語班學習第二外語。 本研究主要探討這 20 位學生在初期法語複合過去時態習得中的遷移模式。本研究採用了有聲思維法收集資料。資料收集中共有三個任務類型。第一個任務是篇章及句子理解。第二個任務是一個關於英語過去時和現在完成時的小測試，用來對比法語符合過去時的理解。 第三個任務是針對任務一的回顧訪談。

定量分析的資料結果顯示遷移主要來自英語，僅有非常少數來自中文。因爲中文是個無時態語言，所以只有在時態系統遷移中出現來自中文的遷移。本研究還發現，來自英語的時態正遷移數量和關於英語過去和完成時態的語法小測試（任務三）的分數呈現顯著正相關。同時，時態負遷移數量和語法測試成績呈顯著負相關。這說明理解法語複合過去時的準確度與學生對英語過去時及現在完成時區別的理解有直接的聯繫。然而，在法語複合過去時理解中的時態遷移與學生的英語語法水準只有中度的相關，且與英語整體水準無關。不過，英語高水準組在任務完成的整體表現上顯著超越英語水準偏低的組。

定性研究結果顯示，時態遷移有可能來自中文或者英語，但大部分源自英語的影響。中文的遷移主要表現在任務一的第二輪理解中（法英翻譯）缺乏時態的標記。而英語的影響則表現在英語整體發展中時態系統的遷移。從 20 位被試的時態選擇來看，本研究總結了 5 個模式， 其中最重要的是時間狀語被作爲時態標誌和動詞本身的性質影響時態的選擇。總的來看，學生們都不是很瞭解法語複合過趨勢到底相當於英語的什麼時態，於是本文呼籲在第二外語的教學中引入法語英語比較分析法來學習法語的時態。

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1 CHAPTER ONE

INTRODUCTION

This research takes a new look at an old topic: transfer and cross-linguistic influence. With the trend of globalization, more and more people are learning a third language, or even a fourth and fifth. It has become compulsory for English majors in China to study a second foreign language in the university. A common phenomenon one can observe is the use of previous linguistic knowledge in the initial stage of third language learning, especially for adult learners. Then the common questions brought about would be: to what extent is the English helpful to the learning of French? Will the native language Chinese still have an influence on the learning of a third language? What would be the effect of two previous languages with different tense systems on the learning of a new foreign language with tense?

Third language acquisition (henceforth TLA) was once subsumed under the field of second language acquisition (henceforth SLA), in which "second" indicates all non-native languages acquired after the first. It was not until the 1980s that multilinguals' processes began to be examined closely and systematically (De Angelis, 2009). A number of researchers started to look seriously at the phenomenon of L3/multilingualism as a separate domain of inquiry. Linguistic and non-linguistic factors have been identified to affect crosslinguistic influence (CLI) in TLA, including factors such as typology, proficiency and order of acquisition. Numerous studies have shown that cross-linguistic influence from an L2 is favored if the L2 and the L3 are typologically similar, especially if the L1 is typologically distant (e.g., Cenoz, 2001, 2003; Dewaele, 1998; Kellerman, 1995; Ringbom, 1987; Stedje, 1977; Williams & Hammarberg, 1998). Even though L2 proficiency has been considered as one of the

major factors that may affect transfer in L3 (e.g. De Angelis, 2005; Ringbom, 1987; Williams & Hammarberg, 1998), there are virtually no experimental studies that analyze proficiency level in the source language as a central variable (De Angelis, 2009), and it is not yet clear how L2 proficiency would influence the source of transfer or the nature of transfer. For example, how proficient does a learner need to be in a second language before it has an effect on TLA? In addition, it has been pointed out for quite some time that the transfer process is different in production and in comprehension where the latter may involve more positive effects (e.g. Ringbom, 1992), but surprisingly, much less attention has been paid to transfer effects in perception and comprehension than to production in the literature of CLI so far (noted in Jarvis & Pavlenko, 2008). As a result, more emphasis has been laid on negative effects of transfer while positive transfer has usually been given remarks in passing. In order to contribute to the existing literature of L2 transfer and transfer in comprehension, this study sets out to explore the effect of an L2 ([+tense]) typologically close to L3 with an L1 typologically distant from L3 on the comprehension of L3 past tense.

The present research has the following purposes: first of all, it investigates the role of prior linguistic knowledge in multilingual comprehension rather than in production, while under the latter context transfer is usually studied; secondly, it specifically looks at the comprehension of French passé composé, which bears similarities and differences with L2 English but is an absent feature in the native language Chinese. Thirdly, it draws on L2 proficiency and the proficiency of specific L2 grammar items as potential variables that influence the comprehension of the target language French. Finally, from the introspective data gathered from the 20 participants, the ultimate goal for this research is to provide insights, implications and guidance for the L3 instructions on French passé composé.

There are altogether six chapters in this thesis. Chapter One serves as an introduction which presents the research background of the current study. Chapter Two provides a detailed literature review on the related areas of the present enquiry, including the history of transfer, the studies on crosslinguistic influence in TLA, and some methodological considerations. Special focus is given to the factors affecting non-native language influence in the TLA. Research questions are proposed at the end of this chapter. Chapter Three presents the details of instrumentation of the current research. The general results and their implications are provided in Chapter Four and Five respectively. Finally, in Chapter Six, implications for L3 instruction are discussed while limitations are also addressed. Possible directions for future research are given at the end of this thesis.

2 CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

There are altogether eight sections in this chapter. Section 2.1 serves as the introductory paragraph. In section 2.2, the history of transfer is reviewed and the definitions of transfer mentioned in the literature are discussed with a new definition provided for the current study. Types of transfer studied in the previous research are reviewed in section 2.3. As the current study explores the transfer in multilingual context, studies on crosslinguistic influence in third language acquisition are discussed in section 2.4. Then what follow in section 2.5 are methodological issues regarding the transfer studies and limitations and advantages of using think-aloud protocol in this study. Finally, a comparison among the three languages (Chinese, English, French) involved in the present study is provided as an introduction for the convenience of further analysis. Last but not least, results of the pilot studies and the corresponding modifications after each study are presented in section 2.7, which leads to the statement of the research questions in section 2.8.

2.2 What is transfer?

2.2.1 History and development of transfer research

The term *transfer* first appeared and was used informally centuries ago in the mid to late 1800s with studies by Muller (1861) and Whitney (1881). Until the 1940s and 1950s, transfer research became widely recognized as a variable that can affect language acquisition, and other linguistic, psychological and cognitive processes (i.e. Fries, 1945; Lado, 1957; Weinreich, 1953). With this beginning as phase one, transfer

research has experienced four phases of development (Jarvis & Pavlenko, 2008). In phase one, research concerns about "defining the scope of transfer, identifying cases of transfer, and quantifying transfer effects" (Jarvis & Pavlenko, 2008, p. 5). The most commonly cited contribution in this phase is from Weinreich (1953), who used the term "interference" for transfer, saying that it is "instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language" (p. 1). However, the implication of *interference* became what was later termed as *negative transfer,* together with other subordinate terms under the generic term *transfer,* such as *positive transfer* (Selinker, 1983), *structural transfer* (Corder, 1983), *lateral transfer (L2 to L3)* (Ringbom, 1978b), *item/procedural transfer* (Ringbom, 2007), and more recently, *interlanguage transfer* (Leung, 1998), *conceptual transfer* (Jarvis, 2000) and *reverse transfer (L2 to L1)* (e.g. Andrews, 1999; Cook, 2003). In phase two, important issues have been addressed: a) verification of transfer effects (e.g. Selinker, 1969, Jarvis, 2000), b) sources and causes of transfer (e.g. Ringbom, 1978b), c) constraints on transfer (Anderson, 1983, Kellerman, 1978), d) the selectivity at the level of individual learners (e.g. Zobl, 1980). Phase three and phase four are closely related to the development of theoretical models to explain transfer (or cross-linguistic influence) and psychological account of how the phenomenon takes place in the brain.

Transfer was once defined under the traditional behaviorism framework, and was later associated with Contrastive Analysis Hypothesis (CAH) (Lado, 1957) and Error Analysis (EA) (Corder, 1963). The behaviorist notion of transfer as a consequence of habit formation gave rise to the CAH, which claims to be able to accurately predict which "old habits" may "transfer," in other words, which "old habits" might cause "interference." The structures of the two languages were systematically compared

within a structuralism paradigm. However, the two major problems of this hypothesis are that first of all, many errors predicted by CAH did not actually occur (Whitman & Jackson, 1972); second, there were other sources of errors that did not come from the learner's L1 (Dulay & Burt, 1974). Therefore it gradually fell out of favor and lost ground to Error Analysis (EA). Rather than taking the L1 as a starting point to predict L2 errors, EA emphasizes the learners' actual problems in production, but with no denial of L1 influence. Therefore, the learners' "interlanguage," a term coined by Gass and Selinker (1983) became the starting point. Some of the errors might be traced back to the CLI, or "language transfer," while some others could not. Most importantly, not only errors are "transferred" (negative transfer), some similarities in the L1 and L2 may also be helpful (positive transfer). However, EA is not without its own problem. Neither did it give the whole picture of language acquisition, nor was it able to identify all the sources of errors.

Partly in reaction to CAH, which states transfer will be more likely to occur between typologically *distant* languages, Anderson (1983) pointed out that L1 structures must be consistent with natural acquisition principles; therefore, typological *similarity* and structural congruence actually increase the likelihood of transfer between the native and target languages. Kellerman (1983) further developed the concept of *transferability*—"the probability with which a structure will be transferred relative to other structures in the L1" (p. 117)—which claims that the occurrence of transfer is based on the learners' *perceived* language distance, regardless of the target language.

Under the emphasis of conceptual system in the learners' interlanguage, most recently, Pavlenko and Jarvis (2001) proposed *conceptual transfer,* supplementary to the prevalent *linguistic transfer*. It is defined as "all instances where conceptual representations are involved in linguistic manifestations of cross-linguistic influence" (p.

228). Another recent development is the study of multilingual transfer, the focus of the current study. It means that transfer can occur not only in the process of second language acquisition, but also between three or more languages. Studies on transfer in multilingual lexicon is marked by the two influential books in multilingualism by Cenoz (2001, 2003), and with more and more studies cropping up within this decade. In a word, rather than viewing the study of third language acquisition simply as an extension of SLA, the current trend is to consider the L3 learner as a learner with unique and specific linguistic configuration (De Angelis & Selinker, 2001).

2.2.2 The problem of definition—transfer or CLI?

As pointed out by Cenoz (2001), it is surprising that for decades, research on transfer has been focusing on native language transfer on the interlanguage (or second language) while "potential influence of an interlanguage on additional interlanguage appears to be widely acknowledged in the field" (p. 42). This is reflected in the various definitions on transfer, or cross-linguistic influence (CLI). The most widely cited description of CLI is by Sharwood Smith (1994): "…the influence of the mother tongue on the learner's performance in and/or development of a given target language; by extension, it also *means the influence of any 'other tongue' known to the learner on that target language"* (Sharwood Smith, 1994, p. 198, emphasis in original).

Currently, CLI is generally used as a super-ordinate term covering instances of transfer, such as native language transfer, or interlanguage transfer, even reverse transfer. For the term *transfer*, different definitions reflect differences of opinions. Generally, Gass and Selinker (1983, p. 372) believe that: "…for most researchers, language transfer is the use of native language (or other language) knowledge – in some as yet unclear way – in the acquisition of a second or an additional language."

However, this conclusion is way too general and vague. Odlin's (1989) working definition of *transfer* in the famous book *language transfer* is probably broad enough to encompass many different viewpoints: "Transfer is the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectively) acquired" (p. 27).

With the increase of research on L2-L3 transfer, the more recent accounts of language transfer can be found in Selinker (1992), which the researcher believes catches the contemporary spirit:

> Language transfer is best thought of as *a cover term* for a whole class of behaviors, processes and constraints, each of which has to do with CLI, i.e. the influence and use of prior linguistic knowledge, usually but not exclusively native language knowledge. (p. 208)

Interestingly, the discussion on the definition of transfer comes a full circle and finally goes back to its original association with CLI, as how it is used in Ringbom's (2007) most recent book on cross-linguistic similarity: "…and today [transfer] appears to have lost at least most of its associations to structuralism and behaviorism…Transfer is here used in a wide sense, corresponding to cross-linguistic influence" (p. 30).

As generally acknowledged, every definition is limited; it has its own problem and emphasis. The purpose of the above presentation is to draw attention to the complex and unpredictable nature of the transfer phenomenon. As recently pointed out by Odlin (2005), transfer happens at every stage of learning and even proficient learners cannot free themselves from its "binding power" (p. 535).

Based on the previous literature, this study proposes a new definition of transfer with a focus on the learner-self. The reason for adopting this new perspective is because the current study will be looking at the interaction of languages in the learners' minds

rather than on the carry-over of the feature of one language to another. It will present a picture of how learners are thinking in multilingual comprehension, and the positive and negative effects of the knowledge of the previous languages on the third. Transfer in this study is thus defined as: Consciously or unconsciously making use of (or what Jarvis and Odlin (2000, p. 540) call "retaining") the knowledge (or features) of the previous language(s) for the comprehension or production of the target language.

2.2.3 Interlanguage transfer

Although for many SLA researchers, the contact between two languages is taken to include more than two languages (Perdue, 1993, p. 48), only until the last decade, an increasing group of linguists have begun to look beyond SLA and concentrate on the contact between three languages to find out about the differences in quality between SLA and TLA. Transfer from the learners' second or additional foreign language to his/her further language is not uncommon. Cenoz (2001), Cenoz & Valencia (1994), De Angelis & Selinker (2001), Magiste (1984), Ringbom (2001), Zobl (1992), etc. provide evidence of language transfer in further language learning from various psycholinguistic perspectives. Thus any theory concerning language transfer should capture the phenomenon of competing language systems in multilinguals (Wei, 2003). This phenomenon is called interlanguage transfer.

"By definition, interlanguage transfer is the influence of one L2 (using the broad sense of the term) over another" (Gass & Selinker, 2001, p. 132). The results of some of the previous studies provide sufficient evidence of the existence of interlanguage transfer effects in multiple language acquisition, which will be discussed intensively in the following section on TLA and mediating variables in L3 transfer. However, most research remains at a superficial level by describing surface configurations of

interlanguage transfer effects without explaining the mental activities and speech production processes and mechanisms involved in the multiple language acquisition. This study, therefore, is going deep into the mental activities as well as describing the surface configuration of transfer in L3 comprehension.

2.3 What can be transferred?

2.3.1 Different types of transfer

Jarvis and Pavlenko (2008) developed a scheme for characterizing CLI types across ten dimensions. The scheme is shown in Table 2.1.

Table 2.1

Characterization of CLI Types across Ten Dimensions

Area of language knowledge/Use	*Cognitive level*	*Channel*
Phonological	Linguistic	Aural
Orthographic	Conceptual	Visual
Lexical	*Types of knowledge*	*Form*
Semantic	Implicit	Verbal
Morphological	Explicit	Nonverbal
Syntactic	*Intentionality*	*Manifestation*
Discursive	Intentional	Overt
Pragmatic	Unintentional	Covert
Sociolinguistic	*Directionality*	*Outcome*
	Forward	Positive
Mode	Reverse	Negative
Productive	Lateral	
Receptive	Bi- or multi-directional	

Note. Adapted from *Crosslinguistic Influence in Language and Cognition* (p. 20), by S. Jarvis and A. Pavlenko, 2008, New York and London, Routledge.

Specifically, linguistic transfer refers to "types of transfer that are examined primarily in relation to linguistic forms and structures" (Jarvis & Pavlenko, 2008, p. 61). It consists of phonological and orthographic transfer, lexical and semantic transfer, morphological and syntactic transfer and finally discursive, pragmatic and sociolinguistic transfer. Conceptual transfer concerns with "similarities and differences

in conceptual categories corresponding to lexical and grammatical categories of the source and recipient languages" (Jarvis & Pavlenko, 2008, p. 112). These conceptual domains include: objects, emotion, personhood, gender, number, space and time, of which the lexical, morphological, syntactic transfer and the conceptual transfer of time is the focus of this study.

The study of lexical and syntactic transfer phenomenon is extensive, but the source and reason for the transfer from the psycholinguistic perspective is not mentioned as much. Linguistic transfer in most cases arises from interlingual associations formed between structures in two or more languages. One of the important consequences of this interlingual association is that the use of structures in one language will often activate the corresponding structures in the other language. This concerns with the how words from two or more languages are stored in the mind and the links between them. There are three levels of lexical representation in knowing a word (e.g. De Bot, 2004b; Kroll & De Groot, 1997; Levelt, 1989), the concept level, the lemma level (an abstraction), and the lexeme level (the form of the word), but there are multiple ways in which the new word might become mentally associated with a word in an already-known language (Jarvis & Pavlenko, 2008).

Previous studies addressing the issue of the effect of L1 on the acquisition of L2 tense and aspect morphology are very limited, yet they usually focus on the common order of development on tense and aspect morphology for different L1 backgrounds (e.g. Bardovi-Harlig, 1999; von Stutterheim & Klein, 1987, etc.). Unexpectedly, as Bardovi-Harlig (2000) noted, "it may be in the details rather than in the large picture that first language influence is found in the acquisition of tense and aspect in a second language" (p. 411). However, those studies have largely investigated learners whose L1 and L2 are both [+tense] languages (Andersen, 1991; Dittmar, 1981; Rohde, 1996;

Salaberry, 1999; Wiberg, 1996 among others). Only a few studies have involved a homogeneous group of [−tense] L1 speakers learning a [+tense] L2 (Bayley, 1991, 1994; Giacalone, Anna, & Banfi, 1990; Wolfram, 1985; Sato, 1990), and none of these studies has focused on *the impact* of the absence of tense in L1 on the acquisition of tense in L2. Yang and Huang's (2004) study is by far the most relevant one to the current study which investigates the possible impact a [-tense] L1 (Chinese) may have on the process of L2 English tense acquisition. There are several important findings: first, classroom instruction may force an early start of tense use; second, the Chinese way of expressing temporality may reinforce the learners' initial tendencies of relying on pragmatic and lexical devices to indicate temporal locations; finally, they have also found that the function of temporal adverbials may change from tense substitute to tense reminder as a result of special classroom training processes.

The conceptual transfer of time is manifested through two kinds of cross-linguistic differences (discussed in Jarvis & Pavlenko, 2008; Odlin, 2005). The first involves languages where temporality is encoded grammatically (such as English, and Spanish) and languages (such as Mandarin) that rely exclusively on lexical and discursive means but have no grammatically marked temporality (Comrie, 1985); the second involves languages with different tense and aspectual systems, such as French and English. There is some convincing evidence of transfer effects involving differences in how languages code temporal meanings. Collins (2002) studied a group of learners of English in terms of how well they distinguished the simple past and present perfect using a cloze test. Results show that the Francophones frequently overused the present perfect in contexts where the simple past was required, a behavior fully consistent with the influence of the French passé composé because it is encoded like "have done" in the corresponding English. This shows that it is common for a French learner of English to

link the present perfect tense in the target language with French passé composé (which usually indicates simple past) from the similar basic verb markings, if the learners are not aware of the underlying difference in tense and aspectual system. Therefore we can infer that it is very likely that English learners of French will frequently equate French passé composé with present perfect tense and perfect aspect in English. The difference in the two systems will be covered in the following section 2.6 on contrastive analysis. The L3 feature involved in this study is also French passé composé.

For the levels of transfer, Ringbom (2007) offers another way of categorization different from the linguistic vs. conceptual in Jarvis and Pavlenko's work (2008), namely transfer manifested at the item level and system level. The underlying similarities of item transfer are "a concretely perceived similarity of form and an associated, assumed similarity of function or meaning between source and target language" (Ringbom, 2007, p. 55). It has a predominantly positive effect on learning, especially for comprehension. In this case, the learners make use of oversimplified one-to-one equivalence hypothesis, L2=L1 (in the present study, possibly L2=L3, or L1=L3), directly mapping the L2 items on to existing L1 items in comprehension. On the other hand, system transfer is a higher level of transfer, "the imposition of higher level rules" (Ringbom, 2007, p. 55). It is the transfer of abstract principles of organizing information in the previous language to the target. Ringbom (2007, p. 5) states that, "It assumes cross-linguistic functional equivalence while formal item similarity is normally not involved." As this distinction on level of transfer is especially relevant to transfer in comprehension, it will be adopted in the current study for data analysis.

2.3.2 Transfer in comprehension—an ignored area in the transfer study

In general, L1 research has been conducted along three different lines—language

comprehension, language production and language development—however, language production has been the most extensively studied area in SLA research. This is also true to transfer studies. As Jarvis and Pavlenko (2008, p. 13) noted: "(much) less attention has been paid to transfer effects in perception and comprehension." Ringbom (2001) further spells out the distinction between transfer in *comprehension* and in *production,* by saying that comprehension has a different direction from production in that it starts out from a linguistic form to which the reader assigns a meaning by mapping it on to the relevant existing knowledge. It allows ambiguity, meaning that it is approximate in nature. While in production, the speaker starts from a pre-verbal intension that he/she gives linguistic form, therefore form comes later in production. In other words, comprehension and production are modes of use relying on different retrieval procedures. For L2 comprehension, the importance of form is manifested in the learners' use of both intra-lingual similarities and cross-linguistic similarities. In contrast, production cannot rely on situational context, and demands higher accuracy and specificity than comprehension. In this regard, "here lies an important reason why formal linguistic similarities play a more important part in comprehension than in production" (Ringbom, 2007, p. 24). Issues related to CLI in comprehension and sentence interpretation attracted increasingly attention in the literature in the past decade (e.g. Koda, 1990; Ringbom, 1992; Sasaki, 1991; Su, 2001; Upton & Lee-Thomson, 2001). Some of these studies on sentence interpretation (Sasaki, 1991; Su, 2001) approach the issue under the framework of competition model. Upton and Lee-Thomson (2001) used the think-aloud protocol to study 20 native speakers of Chinese and Japanese at three levels of English proficiency, with the aim of looking into when L2 readers use their L1 cognitive resources and how these help them comprehend the L2 text. However, empirical study is still scarce.

2.4 The study of TLA and CLI in TLA

2.4.1 Factors that influence transfer in the multilingual context

TLA was once subsumed under the field of SLA, in which "second" indicates all non-native languages acquired after the first. It was not until the 1980s that the multilinguals' processes began to be examined closely and systematically (De Angelis, 2009). A number of researchers started to look seriously at the phenomenon of L3/multilingualism as a separate domain of inquiry. The major aspects on this field of research include the strong tradition of work on sociolinguistic and educational aspects (Abu-Rabia, 1998; Bild & Swain, 1989; Cummins, 2001, etc.); research appeared much slower on cognitive and psycholinguistic aspect (see review of De Angelis, 2009), the applied linguistic aspect and even from the generative linguistic aspect (see Leung, 2007).

While empirical studies in TLA are not as extensive as in SLA, a number of researchers have done important research, especially within the last 15 years, on the influence of the L1 and L2 on the acquisition of an L3 (Cenoz, 2001; De Angelis & Selinker 2001; Dewaele, 1998; Kellerman, 2001; Klein, 1995; Ringbom, 1983, 1987; Singleton, 1987; Williams & Hammarberg, 1998). The study of this cross-linguistic influence (CLI) seeks to explain how and under what conditions prior linguistic knowledge influences the production, comprehension and development of the target language.

Research directly addressing transfer is mostly descriptive. From these studies on TLA, factors affecting transfer can be loosely divided into two big domains: linguistic and non-linguistic. Linguistic factors include factors such as linguistic typology (Cenoz, 2001; De Angelis & Selinker, 2001; De Bot, 1992; Hammarberg, 2001; Jarvis & Odlin,

2000; Ringbom, 1986, 2001; Weinreich, 1953, etc.), frequency (Kellerman, 1983; Larsen-Freeman, 1976; Williams & Hammarberg, 1998, etc.), word class (i.e. the distinguishing between content and function words) (Cenoz, 2001; Poulisse & Bongaerts, 1994; Ringbom, 1986, 2001), the degree of markedness (Kellerman, 1983) and the degree of morpheme boundedness of individual lexical items (Fuller, 1999; Jarvis & Odlin, 2000; Poulisse & Bongaerts, 1994; Selinker & Lakshmanan, 1992, etc.).

Non-linguistic factors include the learner's level of proficiency (De Angelis & Selinker, 2001; Dewaele, 1998, 2001; Fuller, 1999; Hammarberg, 2001; Jarvis, 2000; Kellerman, 1983; Odlin, 1989; Poulisse & Bongaerts, 1994; Ringbom, 1986, 2001; Williams & Hammarberg, 1998), recency of use (Hammarberg, 2001; Williams & Hammerberg, 1998), the amount of target language exposure and use (Dewaele, 2001; Jarvis, 2000; Odlin, 1989; Ringbom, 1986), "second language (L2) factor"/L2 status (Williams & Hammarberg, 2001), language mode (De Angelis & Selinker, 2001; De Bot, 1992; Fuller, 1999; Grosjean, 2001; Hammarberg, 2001; Poulisse & Bongaerts, 1994; Ringbom, 2001), the learner's linguistic awareness, or psychotypology (Bouvy, 2000; Cook, 1992, 1995; De Angelis & Selinker, 2001; Grosjean, 1995, 2001), the learner's age (Cenoz, 2001; Odlin, 1989; Selinker & Lakshmanan, 1993), the learner's educational background and literacy (Fuller, 1999; Odlin, 1989). Also, there is a more general factor, context (Dewaele, 1998, 2001; Grosjean, 2001; Odlin, 1989).

All these factors interact with each other in complex ways, their focuses range from the more general to the more specific; sometimes one overrides the others while sometimes they converge to make an influence, depending on the status of language involved. Nevertheless, among the most important and intensively discussed factors are language distance (typological proximity/psychotypology), proficiency in the target language and in the source language, recency of use, exposure to non-native

environment, and "second language (L2) factor"/L2 status. Some of the above terms have implications that cannot be understood literally from their names, and need to be further explained, clarified and defined.

First of all, language distance refers to the distance that a linguist can objectively and formally define and identify between language families (De Angelis, 2009). It has a lot of equivalent terms, such as "formal similarity," "typological proximity," and "relatedness" (Jarvis, 2000; Odlin, 1989; Ringbom, 1987), though "formal similarity" has some small variations with the other three. "Formal similarity" is not defined on the basis of genetic affiliation (i.e. languages are said to be related as they belong to the same language family), but denotes the similarity between specific features or components of languages, ranging from grammatical structure to lexicon, phonetic features and so forth. Besides this, the factor of "language distance" in general is closely related to "perceived language distance," which was proposed by Kellerman (1977), and later led to the notion of "psychotypology" to appear with frequency (Bouvy, 2000; Cenoz, 2001, 2003, etc.). Psychotypology denotes learners' perceived closeness of the source and target languages involved in the case of non-primary language acquisition (Kellerman, 1979, 1983).

Second, "recency of use" or "recency effect" refers to how recently a language was last used (De Angelis, 2009). Some of the researchers assume that recent use facilitates the occurrence of some kinds of influences due to easier access to linguistic information stored in the mind (Poulisse, 1997; Poulisse & Bonhaerts, 1994). Hammarberg (1998) even list recency of use together with typology, proficiency and L1/L2 status as one of the four determiners of whether a language will take on a main supplier role in the production.

The final factor which needs to be defined and explained is the "L2 factor." In

TLA, it refers to the general tendency to transfer from L2 (s) rather than L1, or the idea of general tendency to activate L2 (s) rather than L1 (Leung, 2007).

In summary, the list of factors that influence transfer in the TLA will not end here, and the more studies done, the more factors that will emerge. Moreover, different scholars have their own emphasis on which ones being the most important. In the current study, two factors will be highlighted, they are (psycho) typology and language proficiency (especially in the source language (L2)), which will be discussed respectively in the following two sections.

2.4.2 The role of (psycho) typology in the cross-linguistic influence of TLA

Numerous studies have shown that cross-linguistic influence from an L2 is favored if the L2 and L3 are typologically similar, especially if the L1 is typologically distant (Cenoz, 2001, 2003; Dewaele, 1998; Kellerman, 1995; Ringbom, 1987; Stedje, 1977; Williams & Hammarberg, 1998, cited in Leung, 2007). First of all, three important contexts concerning the issue of typology with empirical evidence has to be addressed: 1) when learners have knowledge of related and unrelated languages; 2) when learners have knowledge of languages that belong to the same language family but not the same subgroup of within the family; 3) when learners have knowledge of languages that belong to the same family, and to the same subgroup within the family (De Angelis, 2009). It needs to be pointed out here that the factor of "order of acquisition" is ignored temporarily.

With regard to the context of having one language that is unrelated to the other languages (i.e. combination of indo-European language(s) with non-Indo-European language(s)), empirical evidence is the most extensive. First, for Asian languages with Indo-European languages, Fouser (2001) reports that the two English L1 learners of

Korean as an L3 in his study were influenced by their prior knowledge of L2 Japanese (even though whether Japanese and Korean are related is still a matter of debate) which is closer to Korean, rather than English. Di's study (2005) assessed Japanese native speakers with L2 English in the learning of Chinese as an L3; results showed that they transferred more from Japanese, the language they felt typologically closer to Chinese, than English. And the Vietnamese immigrants in Uljin *et al.*'s (1981) study were helped by their knowledge of French in the acquisition of English. For African languages, Ahukanna *et al.* (1981) looked at interference from two previously learned languages (English L2, and Igbo L1) in learners' acquisition of French. Their results showed that English caused more cross-linguistic interference than Igbo, since English and French belong to the same Indo-European family while Igbo does not. Ringbom (1987) also found that his English L3 learners were generally more influenced by Swedish than Finnish, regardless whether Swedish was their L1 or L2. Swedish and English are Germanic languages, while Finnish is not.

> For the second context, there are the following two general tendencies. First, learners continue to rely on the languages more closely related to the target, irrespective of whether these are the first of non-native languages. Second, learners no longer elect one language as the preferred source of information and may rely on more than one language at the same time. (De Angelis, 2009, p. 28)

With regard to the first tendency, the most recent study is the Singleton and O'Laoire's studies in 2004 and 2005: In 2004, they first looked at L1 English–L2 Irish (very advanced)–L3 French using two elicitation instruments. They found that L1 English, which is considered typologically closer to French in lexical terms than Irish is, acts as the dominant source of lexical borrowing. They first interpreted these results as strong support for (psycho) typology, against the "L2 factor." But they had to

acknowledge that, unlike English, the participants' L2 Irish, though very advanced, was only a non-native language. In the 2005 study, therefore, Singleton and O'Laoire looked at bilingual L1 Irish–English participants. They successfully replicated the 2004 results: English but not Irish showed the privileged status in cross-lexical transfer. This is a strong testimony to the role of (psycho) typology. With respect to the second tendency, Bouvy (2000) discusses how some of her French L1 learners used their prior knowledge of two languages (Dutch and German) rather than on their knowledge of Spanish.

The most challenging issue is the third context, which is to predict which language will be the dominant source of transfer when the languages all belong to the same language family, and also the same subgroup within the family. Empirical study is comparatively scant, and underdeveloped. As have mentioned above, other factors such as L2 factor would necessarily need to be examined, and also proficiency level in each language and recency of use proposed by Williams and Hammarberg (1998).

In summary, the language with typological proximity usually acts as the dominant source of transfer despite the order of acquisition, especially under the context of the learner having the knowledge of both related and unrelated languages (languages that belong to different language families).

In the current study, the learners are L1 Chinese, L2 English learners of L3 French. Typologically speaking, Chinese belongs to Sino-Tibetan language family while English and French are both in the Indo-European language family, which means that it is under the first context of the previous discussion. As the previous research unanimously point to the "related language" as the dominant source of transfer, it is thus hypothesized that English will be the privileged source of transfer in this study.

2.4.3 The role of L2 proficiency

In De Angelis' (2009) review, she notes in particular that there are virtually no experimental studies that analyze proficiency level in the source language as a central variable, only several descriptive studies. For example, the most widely cited work is Ringbom's (1987) influential book. Though proficiency is not a central variable being investigated, it is paid much attention to and discussed extensively. Ringbom (1987) pointed out that proficiency in the source languages determines the type of transfer that is likely to occur in the target language. In other words, transfer of form is a superficial type of transfer which does not need the non-native language to have high proficiency while transfer of meaning can only occur from the language that the speakers know well. Even though empirical studies are scant, two very small scale studies (Jaensch, 2009; Tremblay, 2006) provide something interesting to be further explored.

Jaensch's (2009) study looked at whether learners who have *not encountered* certain features in their L1 or L2 are somehow more sensitive to them in the L3. Results showed that native Japanese learners of L3 German who have achieved a higher proficiency in their L2 English are more target-like in their performance on acquiring German determiner phrase than those learners of an equivalent L3 proficiency but a lower L2 proficiency.

Another important study is Tremblay's (2006). This was a study investigating the effect of L2 proficiency and L2 exposure on cross-linguistic influence from L1 English and L2 French on L3 German. There were three groups of subjects involved: the high proficiency/high exposure group, the high proficiency/low exposure group, and the low proficiency/low exposure group. Results were that first of all, there were two sources of CLI, L1 English and L2 French, of which English was the main source for all three groups. The two high proficiency groups were similar in terms of L1 influence, but the

low proficiency group still showed twice as high, even though not significant, the overall rate of L1 influence. This was interpreted as "L1 influence has a tendency to decrease as L2 proficiency increases" (p. 116). Secondly, while L2 proficiency appeared to have an impact on the frequency with which L2 intrudes during L3 communication, L2 exposure had a significant impact on the way L3 learners can take advantage of the L2 in order to create lexical inventions and code-switch. In the discussion section, Tremblay gave three reasons to explain why CLI from L2 French is marginal, the first one being the much too low level of proficiency in French. She remarked that "unless a threshold level of L2 proficiency is achieved, CLI from L2 on L3 is very marginal" (p. 117). The second possibility was the problem in controlling the research setting. The third one was certainly psychotypology. At the moment, it can be seen that proficiency always interacts with other factors, especially typological proximity, to have an influence on who should be the major source of transfer.

Of other studies which have mentioned proficiency, transfer can occur from either non-native language that the speaker knows well (Ringbom, 1987; Williams & Hammarberg, 1998), and from the language that the speaker does not know well (De Angelis, 2005). In William and Hammarberg's (1998) study, they conducted a longitudinal study to examine the role that L1and L2 play in the acquisition of an L3 in the form of non-adapted language switches. The participant was an L3 Swedish learner whose L1 was English and had other previously learnt L2s. She had near-native proficiency in German, advanced knowledge of French and basic skills in Italian. Results showed that the learner's L2 German was the major source of cross-linguistic influence mainly due to the level of proficiency. But William and Hammarberg's (1998) also pointed out that other factors such as typology and recency of use interact with proficiency to make an influence. On the other hand, another clear example in De

Angelis' (2005) study indicated that learners can be influenced to a significant extent by a language they did not know well. The two groups of subjects for the within-group comparison in her study were with different native languages, and different non-native languages but the same target language (Italian). One group from Pennsylvania was of L1 English speakers with prior knowledge of French or Spanish, the other group from Puerto Rico was of L1 Spanish speakers with prior knowledge of French or English. All subjects were asked to read a text and provide a written summary in target language Italian. The summaries of learners with or without the prior knowledge of French were compared: English and Spanish first language (L1) speakers with knowledge of French were found to use significantly more subject insertion than speakers without knowledge of French. Most importantly, the learners' proficiency level in the French nonnative language was extremely low. For the L1 Spanish group, none of the learners has studied French for more than 1.5 years, and for the L1 English group, no one was able to translate more than ten words into basic French.

This in turn raises an important issue of "threshold level"—how proficient learners need to be before their prior knowledge begins to affect the L3 production. No conclusion has yet been made since some research points to a low threshold level to non-native language proficiency (De Angelis, 2005), while others (e.g. Tremblay, 2006) point to the opposite; the current study does not intend to solve this complicated issue, but is trying to present a picture of how students of different L2 English proficiency are different in choosing their source of transfer in comprehension.

2.5 Methodological considerations in the study of transfer

As noted by Jarvis and Pavlenko (2008), there are two general approaches to investigating CLI as a psycholinguistic phenomenon, the first being the intrasubjective

approach, the second being the intersubjective approach. They stated that, "Some CLI-related phenomenon that display a high degree of individual variation may be best approached through case studies or other types of studies that focus on individuals rather than on groups" (Jarvis & Pavlenko 2008, p. 80). This intrasubjective CLI research is to uncover as much specificity as possible about how CLI manifests itself in the language and cognition of real individuals. In a group of case studies, in most cases, there may be both a qualitative and a quantitative component of the study. The qualitative description tells how and why certain patterns occur while the quantitative part tries to verify the degree to which CLI interacts with other variables. According to Ellis (1994, p. 669-676), there are five main types of data that are used in SLA research and related other areas of linguistics and applied linguistics, but no single type of data collection is completely or consistently trustworthy. The fifth type—self report data, will be used as the major source of data collection in the current research. The next section will be a review of this method used in the related field of current investigation.

The same important as determining how much and what types of data to gather for an intrasubjective investigation, the identification of CLI, as suggested by Jarvis (1998, 2002a), best rests on the three types of evidence: intragroup homogeneity, intergroup heterogeneity, and crosslinguistic performance congruity. Intragroup homogeneity involves "determining the consistency with which a group of speakers performs in the source language with respect to a particular language feature, and examining whether they exhibit a comparable level of consistency in their use of a corresponding feature of the recipient language" (Jarvis & Pavlenko, 2008, p. 47). Intergroup heterogeneity is the evidence that groups of individuals who speak different source languages perform differently in the same recipient language, so it is not what all language users do. Finally, cross-linguistic performance congruity involves "comparing

language users' performance in both the source and recipient languages, and determining whether their performance in the recipient language is directly motivated by the language structure and patterns they produce in the same context in the source language" (Jarvis & Pavlenko, 2008, p. 47). The design of the current study aims to include the evidence of both intragroup homogeneity and cross-linguistic performance congruity. It has a group of participants from the same language background all studying the same recipient language (this is to see intragroup homogeneity) and the design of the study includes a special task in the source language of the corresponding language feature which also exists in the recipient language (this is to examine cross-linguistic performance congruity).

2.5.1 Research using think-aloud protocol in reading comprehension

The history of using think-aloud protocol to study reading comprehension dates back to the early twentieth century (e.g. Titchener, 1912a, 1912b). It has also been used as a means to investigate readers' strategies including reasoning, inferences, summarization, and general cognitive strategy use while reading (Pang, 2006). Because of the essence of such a procedure is the report of thoughts, the think-aloud method offers promise of breaking into the reading process to reveal on-line strategies (Olson *et al.*, 1984; Scardamalia & Bereiter, 1984). In the mid-1980s and early 1990s, most think-aloud studies of reading investigated the effects of various reader, text, and task variables on the processing during reading (Afflerbach, 1990; Langer, 1990), Since the mid-1990s, a growing body of reading studies conducted using think-aloud protocols have made inferences regarding the mental processes and strategies that occur during reading (Cote & Goldman, 1999; Magliano, Trabasso, & Graesser, 1999; etc.)

In summary, the last two decades have witnessed an increasing use of think-aloud protocol to investigate cognitive and mental reading processes. The suitability of the method has provided rich accounts of reading, as Afflerbach (2002) remarked, it is probable that think-aloud will continue as a popular methodology to describe cognitive aspects of reading and to explore the strategies readers use.

2.5.2 Think-aloud protocol in the study of transfer

As for the use of think-aloud protocol in the study of transfer in reading comprehension, research is scant. The most important one is the study of the role of the first language in second language reading by Upton and Lee-Thompson (2001), but this study mainly focuses on transfer of cognitive strategies from L1 to L2, rather than specific linguistic transfer. Nevertheless, Odlin (2003) still recommended the use of self-report data in studies of transfer, stressing that learners' reflections may shed light on some of the complexities of cross-linguistic influence.

Under the multilingual context, there are two important studies that applied think-aloud method in the study of CLI. The first one is Calvalho and Silva's study (2006). This study compared two groups of English-Spanish bilinguals with different L1s (English or Spanish) in their use of future subjunctive in L3 Portuguese. For the 16 participants, each was given two pedagogical tasks in Portuguese during individual sessions. The tasks required the writing of sentences including present subjunctive or future subjunctive. Participants were asked to verbalize their mental processes while performing the task. The data were collected by means of two self-report techniques, think-aloud protocols and stimulated recalls, the latter following the former as a complement to clarify some aspects of the think-aloud data. Results showed that both groups relied heavily on Spanish in order to perform the pedagogical task. There was

evidence that linguistic similarity between the languages overrides order of acquisition. This conclusion was not only based on error analysis, but more importantly, on data derived from learner reflections, which in some cases elucidated transfer patterns that would not be revealed otherwise. The other important study by Jessner (2003) investigates and testifies the hypothesis of cross-linguistic interaction (CLIN), a new concept addressed under the framework of dynamic systems theory. Fourteen bilinguals (German/Italian) learning English participated in the study, in which they were asked to do an academic writing assignment. This qualitative study chose to use the method of think aloud in order to get access to the mental activates of the students during the text production. Participants were asked to formulate loudly all their thoughts during the writing performance without the use of a dictionary. The introspective data gave evidence of the metalinguistic thinking processes involving the use of all three, typologically related languages. It "demonstrates how the testees search for and assess improved phrasing and how they compare cross-linguistic equivalents" (Jessner, 2003, p. 51). While acknowledging the limitedness of this method, the introspective data is still considered valuable enough to be included in the discussion of, for example, the supplier languages, lexical searches, and avoidance strategies.

2.5.3 Controversies and limitations in using the think-aloud method

Verbal reports have been regarded with some degree of suspicion since some researchers doubt the validity of introspective reports. The primary arguments against the use of think-aloud technique in collecting protocol data concern mainly the accessibility to cognition and the disruption of cognitive processes (Garner, 1988; van Someren *et al.*, 1994).

For the first concern, accessibility, Ericsson and Simon (1980) note that subjects do have accessible memory of cognitive processes and awareness of the information while the process is going on. But they further suggest that one possible source of incomplete data is when some recurrent processes have become automated and are likely to be unavailable to working memory and, consequently, to accurate verbal reports. However, with substantial empirical evidence, Ericsson and Simon (1993) still found the protocols of think-aloud or retrospective report to be valid.

As for the second primary concern, whether the disruption of cognitive processes alters the processes themselves, "it is possible that subjects lose information, especially if they report under a heavy cognitive load, they tend to stop verbalizing or they provide less complete verbalizations" (Ericsson & Simon, 1980, p. 242). It is thus suggested that procedural approaches should aim to minimize the effects of interruptions and consequent data loss. Some researcher use probes, open-ended questions (e.g. Upton & Lee-Thomson, 2001), or red dots (Pang, 2006; Tang, 1997) to indicate places to pause and report. Although probes may have other draw backs, they have the effect of increasing the explicitness of the reports and, hence the reliability (Afflerbach & Johnston, 1984).

In all, the above criticisms suggest that while it might be true that complete data cannot be collected through such data collection method, valuable data can still be gathered. Even though the use of the think-aloud method is generally accepted within reading research, especially in the study of cognitive processes involved in the comprehension, we still need to be very cautious about its limitations. There are some ways of improving the validity of using such method, such as a good explanation and practice before the real task (Hartman, 1995), minimizing the additional cognitive

demands and the amount of time between the utilization of a strategy and its report (Ericson & Simon, 1980).

2.6 A contrastive analysis of tense and aspect in Chinese, English and French

2.6.1 Tenses in French and in English

French and English have different tense and aspectual systems. The current study focuses on one of the past tenses in French, passé composé. In French, temporality is expressed by tense, time adverbials and periphrastic tenses (auxiliaries followed by past participles), while in English, temporality is conveyed by tense, modals, *have* and time adverbials (Ayoun, 2005). French main past tenses include *passé composé*, the *imparfait,* and the *plus-que-parfait* as illustrated in the following examples (please be noted that a French tense may have more than one possible English equivalent):

a. Sophie *est arrivée* en retard.
   Sophie is arrived-PERF[1]-FEM late
   'Sophie arrived late.'
b. Sophie *arrivait* en retard.
   Sophie arrived-IMP[2] late
   'Sophie arrived/was arriving/would arrive late.'
c. Sophie *était arrivée* en retard.
   Sophie was arrived-PERF-FEM late
   'Sophie had arrived late.'

The English main past tenses are the simple past, the past progressive and past perfect, as shown in the following examples:

a. He worked all day.
b. He was working all day.
c. He had worked all day.

In addition, French and English are different in terms of features such as tense, person, number, gender and case. Particularly, French verbal forms are inflected for

[1] PERF = Perfective aspect, FEM = female gender
[2] IMP = Imperfect aspect

person, number and tense, whereas English verbal forms typically exhibit zero derivation. Let us have a look at how French verbal paradigm is morphologically richer than English. Take the auxiliary verbs *être* 'to be' and *avoir* 'to have' as an example:

	être	avoir
1sg	Je *suis*	J'*ai*
	'I am'	'I have'
2sg.	Tu *es*	Tu *as*
	'you are'	'you have'
3sg.	Il/elle *est*	Il/elle *a*
	'He/she is'	'he/she *has*'
1pl.	Nous *sommes*	Nous *avons*
	'we are'	'we have'
2pl.	Vous *êtes*	Vous *avez*
	'you are'	'you have'
3pl.	Ils/elles *sont*	Ils/elles *ont*
	'They-MASC[3]/they-FEM are'	'They-MASC/they-FEM have'

These two verbs are irregular verbs in French. They have irregular inflectional paradigms and thus morphologically richer in that all verb forms are inflected and all forms exhibit a different inflection. In contrast, the English verbs are only inflected on the third person singular. Furthermore, in past tense, all the persons have only one form of inflection, which is the past tense form of the main verb. The above is an example of how French and English are different in terms of verb inflections in present tense.

In summary, French and English tense systems (in particular past tense) present a lot of cross-linguistic differences, as well as some similarities. French exhibits much richer inflectional morphology than English, but temporality in both languages is expressed by tense and time adverbials.

2.6.2 Aspectual systems of French and English

In the English mainstream descriptive grammar, there are two major ways of aspectual distinction. The first type (e.g. Quirk *et al.*, 1985) defines *aspect* as: "a

[3] MASC = masculine gender

grammatical category which reflects the way in which the verb action is *regarded* or *experienced* with respect to time. …aspect is not deictic, in the sense that it is not relative to the time of utterance" (p. 188, emphasis in original).

They further divide aspect into two basic constructions, perfective and progressive:

> For some purposes, the two aspect constructions of English, the perfective and the progressive, can be seen as realizing a basic contrast of aspect between the action viewed as complete (perfective), and the action viewed as incomplete, i.e. in progress (imperfective or progressive). (Quirk *et al.*, 1985, p. 189)

In both Quirk *et al.* (1985) and Biber (1999), the perfective aspect is marked by using the auxiliary 'have', and progressive with 'be'. In addition, tense and aspect combine freely in the complex verb phrase as illustrated in Table 2.2:

Table 2.2

Tense and aspect combinations in English

SYMBOL	NAME	EXAMPLE
Type B	Present perfective	He has examined.
	Past perfective	He had examined.
Type C	Present progressive	He is examining.
	Past progressive	He was examining.
Type BC	Present perfective progressive	He has been examining.
	Past perfective progressive	He had been examining.

Note. From *A Comprehensive Grammar of the English Language* (p.189), by R. Quirk, S. Greenbaum, G. Leech,and J. Svartvik,1985, Longman.

But it should be noted particularly here that, "tense" for this respect, is limited to the morphological opposition between present and past form of the finite verb, instead of the "tense" in traditional grammar, which can refer to the above set of oppositions of tense and aspect as "compound tenses," in which they include categories as the "past perfect tense" (Quirk *et al.*, 1985). Another notion is, as there is a close connection

between the perfective construction and time, the perfective is commonly termed as the "perfective tense" (or "perfect tense"). That is the reason why in the second way of distinction, perfect has been categorized into the system of "secondary tense."

The second type of aspectual distinction is described in Huddleston and Pullum (2002), where there are four systems, two of tenses, and one each of aspect and mood:

Table 2.3

Tense and aspectual distinctions

SYSTEM	TERMS	MARKING	EXAMPLE
i Primary tense	Preterite	preterite	went
	Present	present tense inflection	goes
ii Secondary tense	Perfect	***have*** (+past participle)	has gone
	Non-perfect	[unmarked]	goes
iii Aspect	Progressive	***be*** (+gerund-participle)	is going
	Non-progressive	[unmarked]	goes
iv Mood	Modal	Modal aux (+plain form)	can go
	Non-modal	[unmarked]	goes

Note. From *The Cambridge Grammar of the English Language* (p. 166), by R.Huddleston, and G. K. Pullum, 2002, New York: Cambridge University Press.

Here, "perfect" is grouped into a separate system of tense, independent of "aspect"—meaning "a system where the basic meanings have to do with the internal temporal constituency of the *situation*" (p. 117, emphasis added). Here we can see that the *aspect* not only indicate grammatical but also lexical aspect, the former reflected through morphological markers, the latter referring to the inherent semantic property of the verb phrase or predicate (Ayoun, 2005).

Interestingly, Huddleston and Pullum (2002) further distinguish between terms for form and for meaning, "tense" and "aspect" are terms for form, while "time" and "aspectuality" are terms for meaning, which means that the formal system of "tense" has the associated areas of meaning of "time", while the corresponding category of meaning of "aspect" is "aspectuality." "Aspectuality" is where French and English are

different in terms of aspectual system. There are two general categories of aspectuality, namely perfective and imperfective. With perfective aspectuality, the situation is presented in its totality, as a complete whole, while for imperfective, the situation is not presented in its totality, as illustrated in the example:

He died last week. He reigned for a year. [perfective]
He lives in Bonn. He is working. [imperfective]

French is a language that has imperfective and perfective *aspect*, as it has *distinct verb forms* whose basic meanings correspond closely to these aspectualities, but English, is *not* such a language, the simple present and preterite can both be used either perfectively or imperfectively. Therefore, these two terms in English are used "wholly for categories of meaning and interpretation" (Huddleston & Pullum, 2002, p. 124). However in English, we have a special case of imperfectivity, which is progressive aspectuality. Since it has a basic function of the "be" + gerund-participle construction, it is called progressive *aspect* (Huddleston & Pullum, 2002).

In summary, in French, the main aspectual distinction is between perfective and imperfective; while in English, it is between progressive and non-progressive/perfective (up to different interpretations). The perfective in French (here we only talk about past) is realized through the morphology of *passé composé* and *plu-que parfait* (as mentioned above). The imperfective is realized through the morphology of the *imparfait*. If we take the more direct aspectual distinction in English where we only look at grammatical aspect (the first type of distinction: perfective vs. progressive), the perfective is realized through the *past perfect*, and the progressive through *past progressive*, leaving the simple past tense as the tense *unmarked* for aspect. This is illustrated in Figure 2.1a and Figure 2.1b:

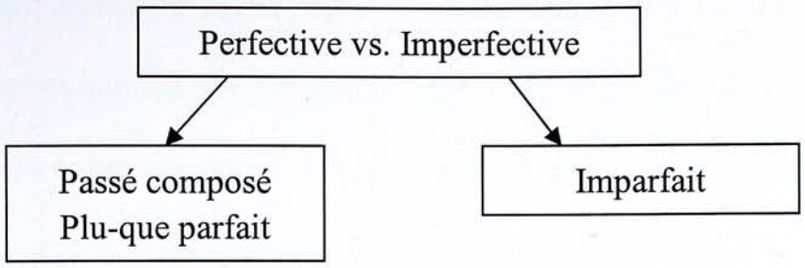


Figure 2.1a. French aspectual system (past)

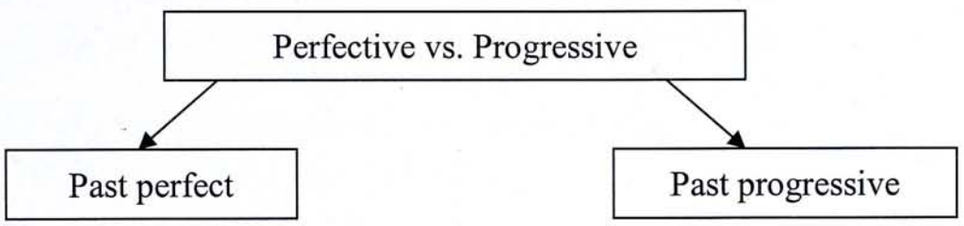


Figure 2.1b. English aspectual system (past)

2.6.3 Tense and aspect in Mandarin Chinese

Formulating an assumption that is widely held, Li and Thompson (1981) write: "Mandarin has no markers for tense" (p. 13). However, instead of tense, Mandarin speakers can specify time frames with "aspect," which determines the state or progress of an action.

Generally we agree that Mandarin Chinese "draws a central distinction between the perfective and the imperfective" (Xiao & McEnery, 2004, p. 89) under the model of Smith (1991, 1997, as cited in Xiao & McEnery, 2004), where he coined it as "view point aspect" in contrast to "situation aspect." This way of distinction is close to what has been talked about previously on the second way of distinction of aspect which gives more emphasis on semantic aspect. This is because in the Chinese aspectual system, the combination of individual aspects is much more semantically restricted and much less grammatically regular than that in English or French.

In particular, the Chinese perfective aspects have four perfective viewpoints (following Smith, 1991, 1997, in Xiao and McEnery, 2004): 1) the actual aspect (ACTL)

marked by *–le,* 2) the experiential aspect (EXP) marked by *–guo* 3) the delimitative aspect marked by verb reduplication and 4) the completive aspect marked by resultative verb complements (RVC) as illustrated in the following examples:

1) *Xiao ming taotuo-le falu de zhicai*
   xiao ming escape-ACTL law GEN punishment
   'Xiao ming escaped the punishment of the law.'
2) *ta zai lundun zhu-guo san-nian*
   He in London live-EXP three-year
   'He once lived in London for three years.'
3) *ta xiao xiao shuo* [...]
   he smile smile say
   'he smiled a little and said [...]'
4) *ta xi-wan-le yifu*
   he wash-finish(RVC)-ACTL clothes
   'he has finished washing his clothes.'

In summary, Chinese tense and aspectual system is almost totally different from that of French or English. First of all, Chinese language is considered not to be an inflective language. Secondly, it does not even have grammatical tenses or aspect encoded through verb markers, but rather by aspect markers. The only similarity is that the Chinese language does have the same categorization in aspect—perfective vs. imperfective—as that in French.

2.6.4 Passé composé in French

There are two possible constructions of passé composé in French if a speaker wants to express a past completed action. Two verbs are needed for the perfective form, the auxiliary (*être* or *avoir*) and the past participle. In most textbooks introducing passé composé in French, the arrangements of introduction on the two constructions of passé composé are in the order of type I (with aux. *avoir*), type II (with aux. *être*), both types having three possible English equivalents, as illustrated in the following example:

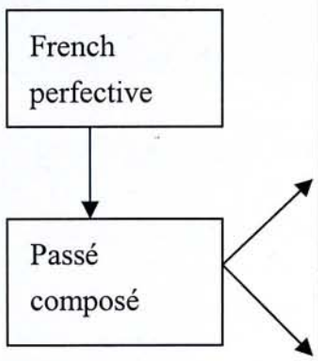
J'ai renseigné les clients. I informed the customers.
I have informed the customers.
I did inform the customers. (This is much less common)

In addition, there will usually be another session devoting particularly to the agreement issue in the passé composé. If the main verb is reflexive it takes *être* and needs to mark reflexivity with one of five reflexive pronouns, and the past participle (whether regular or irregular) is inflected for gender and for number. Another situation is, the past participle (whether regular or irregular) is inflected for gender and for number when the direct object is situated before the main verb, even if the auxiliary is *avoir*. All the above descriptions are showed in Table 2.4 in detail:

Table 2.4
Passé Composé and Its English and Chinese Equivalents

Languages			**Tense: Le Passé composé**
French	Type I: aux. « avoir » + past participle		J'**ai fini** mon travail. I have-finished-my-work.
	Type II: aux. «être» + past participle (agreement with the subject in gender and in number)		Elles **sont sorti*es***. They (FEM) -are-gone-out (PL)
	Other Agreement issues	Direct object located in front of the main verb	Combien de **romans avez**-vous **lu*s*** pendant les vacances ?
		Reflexive main verb	Nous **nous sommes lavés** dans la riviere.
English Equivalents	Type I		= I have finished my work. /I finished my work.
	Type II		= They have gone out. /They went out.
	Other Agreement issues	Direct object located in front of the main verb	= How many novels have you read during the vacation? /How many novels did you read during the vacation?
		Reflexive main verb	= We washed in the river. /We have washed in the river.
Chinese Equivalents	Type I		= 我做 完 作业了. I-do-done (RVC)-homework.
	Type II		= 他们 出去了. They-go-out-(ACTL).
	Other Agreement issues	Direct object located in front of the main verb	= 你 假期 读了 几本小说? You-vacation-read-ACTL-how many novel?
		Reflexive main verb	= 我们 在河里 洗了澡。 We-river-in-wash-ACTL.

In terms of aspect, the French passé composé can indicate two aspects in two tenses in English respectively, see the following Figure 2.2:



English	Morphological encodings in English	Morphological encoding in corresponding French
No aspect past tense	Past form of the main verb	Can be 1) aux. *avoir* (agreement with the subject, no past form) + p.p. 2) aux. *être* (agreement with the subject, no past form) + p.p. (number agreement with the subject)
Perfect aspect present tense	aux. *have* (agreement on the third person) + p.p.	1) aux. *avoir* (agreement with the subject, no past form) + p.p. 2) aux. *être* (agreement with the subject) + p.p. (number agreement with the subject)

Figure 2.2. Passé composé concerning aspect and its morphological encoding in French and in English

To put it simply, the passé composé (PC) in French covers two meanings that English conveys through two different forms ("has/have done" and "did"). This difference between the two languages may result in problems for English speaking learners of French wishing to express a completed action. The passé composé is even more difficult to acquire for an English speaker because of its structural or morphological complexity.

After this section, it can be seen even more closely that, English, the learners' L2 in the current study, is typologically closer to L3 French than Chinese. Therefore it is hypothesized that the transfer mainly comes from the L2 English, instead of Chinese.

2.7 Pilot studies: findings, implications and modifications

2.7.1 The first pilot study (June, 2009)

The first pilot study was conducted under the original proposal, investigating both L3 comprehension and production of French passé composé. In the comprehension task, there were 3 passages and 9 sentences. The production task was consisted of a sentence completion task and a translation task. Apart from the comprehension and production tasks, there was another special task of cross-linguistic similarity judgment, which was to choose the right English form of the given French sentence. Four participants (two were high proficiency group and two were low proficiency group) took part in the pilot study. Introspective data on the comprehension and production tasks were collected. The original idea of data analysis was to quantify the rate of transfer, and to study primarily the effect of L2 proficiency on transfer rate in both comprehension and production.

Findings from the first pilot study suggests six issues to be modified: 1) Transfer is a complicated phenomenon; it is thus impossible to quantify all cases of transfer, but only some cases of transfer such as negative and very clear instances of lexical transfer and syntactic transfer. 2) A great deal of individual differences were observed in the pattern of transfer, so there is a necessity of including a qualitative part of research, even case studies. 3) However, for the part of sentence comprehension concerning tense and aspect, the subjects tend to avoid thinking in English. It is because if one only needs to know the meaning in Chinese, there is no need to pay attention to tense. Knowing the approximate time setting is enough for comprehension, while verb marking creates processing load. Therefore, if participants were not asked deliberately to translate the sentences into English, it would not be possible to identify interesting cases of transfer

in tense and aspect. 4) In production, not much data of transfer could be observed than in the comprehension. In other words, the data is not rich and worthwhile for analysis. The reason may be that a typical beginner student in China does not have the ability in producing natural written or spoken language in a second foreign language, especially for spoken language. 5) The similarity judgment task did not reflect the subjects' actual understanding of which tense to associate in English with passé composé in French, because the students have very advanced exam-taking skills. Usually they could choose the right English equivalent from the given ones even without looking at the original French sentence, as they could directly judge by the appropriateness of grammar of the English sentences.

2.7.2 The second pilot study (July, 2009)

The second pilot study removed the part of production; thus the focus was on comprehension only. The similarity judgment task was changed into a grammar test on past and perfect tenses in English. Two participants (one from the high L2 proficiency group, the other from the low) were asked to *comprehend* a small text in French using the think-aloud protocol, and afterwards, to *translate* 12 French sentences into English while thinking aloud. They could choose which language they would like to report in.

The findings of the pilot study suggested that if the subjects chose to comprehend in Chinese or to associate French with Chinese, it was always approximate, especially with regard to tense and aspect. In addition, translation and comprehension had to be two separate tasks. The reason was that natural on-line comprehension had a different process from the comprehension process in translation, even though they both involved the process of comprehension. However, the result was strongly influenced by the nature of the task. For the comprehension for translation, the final outcome of the

comprehension process was to put the concept (or lemma) into another concrete language (here English), so they tended to force themselves to activate the English language more, just because "it saves time," as one of the subjects remarked. In contrast, for natural comprehension, participants would like to choose to comprehend and report in the language they were comfortable with, which was usually Chinese. Therefore it might be better to include a separate second round of English translation right after the completion of natural comprehension (the first round).

The second problem was prompting. It was found that more questions were needed to be asked concerning the mental process of comprehension and the perceived cross-linguistic similarity in the retrospective part of think–aloud after each sentence. These extra questions asked were: "Did English/Chinese help/hinder you in understanding the sentence just now?" "Do you think English/Chinese is similar to French in this regard? In what way? And why?" "Did you think of 'XX' in English/Chinese? Why?" "Did you try *not* to think of the word 'XX' in English? Why not?" Finally, from this pilot study, a preliminary coding scheme was developed for the qualitative as well as the quantitative analysis of the introspective data, which will be discussed in the next chapter.

2.7.3 The third pilot study (July, 2009)

The third pilot study took place after the final modification of the design. The only difference between this pilot study and the second was the one separate round of English translation in the comprehension task. Two participants, one with high L2 English proficiency, and the other with low English proficiency, participated in the study. Results showed that the coding scheme was workable. For the qualitative part of analysis, there was rich data to be analyzed. Each participant gave over 30 minutes of

introspective report on their comprehension process of French. As regards the quantitative part of analysis, though it was not able to take place because of the small number of subjects, some expected general patterns were observed from the raw numbers.

2.7.3.1 Results and analysis from the third pilot study

The general pattern of transfer was that the low L2 proficiency learner activated more Chinese words while comprehending the French sentences, and she had two cases of transfer from Chinese while the high L2 proficiency learner was not influenced by the native language Chinese at all, with all cases of transfer coming from English. As for the pattern of transfer in tense and aspect particularly, the low L2 proficiency learner tended to equate passé composé with present perfect tense *only,* while the high L2 proficiency learner presented a more complicated understanding: she associated the first type of structure of PC ("*avoir* (= 'have/has') + p.p.") with present perfect tense in English, and the other type of PC ("*être* (= 'is') +p.p.") with simple past tense. Even though this is a wrong assumption, she was able to comprehend some sentences of PC with aux. *avoir* (equivalent to simple past tense in English) correctly using her knowledge of English, by looking at the time adverbials.

Table 2.5 and Table 2.6 generated from the second coding further show that the high proficiency learner did perform better in the comprehension of PC than the low L2 proficiency learner by producing less errors, and in turn, less negative transfer. Test scores for part two are 15 for high L2 proficiency learner and 12 for low L2 proficiency learner. Even though right now it is not possible to show statistically that these test scores are negatively correlated with the negative transfer rate in tense and aspect, it nevertheless shows some pattern of it.

Table 2.5

Data analysis of the third pilot study—the learner with high L2 proficiency

Maureen (High L2 proficiency)			
Language of activation (word count)	English		157
	Chinese		103
Source of transfer	English only		
Error count (times)			21
Transfer in tense and aspect	Situation 1: Lexical transfer manifested in Morphological error (item transfer)	Positive	0
		Negative	**6**
	Situation 2: system transfer in tense and aspect	Positive	1
		Negative	1
Other types of transfer	Lexical		26
Nature of transfer	Negative		**16**
	Positive		**19**

Table 2.6

Data analysis of the third pilot study—the learner with low L2 proficiency

Myra (Low L2 proficiency)			
Language of activation (word count)	English		149
	Chinese		**127**
Source of transfer	English		37
	Chinese		**2**
Error count (times)			28
Transfer in tense and aspect	Situation 1: Lexical transfer manifested in Morphological error	Positive	1
		Negative	**9**
	Situation 2: system transfer in tense and aspect		0
Other types of transfer	Lexical		29
Nature of transfer (for all cases of transfer)	Negative		**20**
	Positive		**19**

In summary, from the pilot studies, results show that think-aloud protocol can be used as a valid tool for collecting data concerning transfer, even though one needs to be very cautious about how the empirical task should be carried out. The form and the

instruction of the task may change the nature and content of the report. Results also suggest that transfer can be identified from the introspective report and be quantified, while at the same time rich qualitative data can also be generated. It has to be noted that the current research design is the direct result of the above pilot studies.

2.8 Research questions

The previous sessions reviewed the literature on the history of transfer, the types of transfer that can be studied, transfer under the multilingual context and the effect of typology and L2 proficiency on the CLI of TLA, and finally some methodological considerations in the study of transfer. They altogether serve as a main guidance for setting the research questions in the current study, they are:

1. Generally speaking, for L1 Chinese-L2 English-L3 French learners, what is the major source of transfer in the comprehension of French passé composé? Will L2 proficiency influence the source of transfer?
2. What are the patterns of transfer in tense and aspect as regards to passé compose? Is the transfer positive or negative?
3. Why are there such patterns of transfer in tense and aspect? Are they related to general L2 proficiency or the different understandings of English past and perfect tenses?
4. Is there any significant difference in the *outcome* of L3 past tense comprehension between different L2 proficiency groups? Will the high L2 proficiency group significantly outperform the low one?

3 CHAPTER THREE

METHODOLOGY

3.1 Participants

Twenty L1 (native) Chinese-L2 English-L3 French beginners at Nanhai Campus of South China Normal University[4], Guangzhou participated in the study. They were all year-three students aged between 20 and 25 majoring in English. However, their proficiency level in English varies. All participants had learned English (as required) as an L2 since high school and had enrolled in the same second foreign language course of French for only a year at the time of the study. The participants were carefully selected to ensure that all of them learned only three languages and in the order L1 Chinese-L2 English-L3 French with the same type of French instruction and similar amount of French exposure. Finally, they were grouped according to their L2 proficiency (high and low) on the basis of their scores of a nationwide English language proficiency test—TEM-4.

3.2 Sampling procedure

The sampling procedure consisted of the following three steps. First of all, 24 students were selected randomly (24 of them agreed to participate in the study) from the same beginner level course of 40 students in French. Second, for these 24 selected, they were required to do a bio-questionnaire, in which they had to give a clear account of their language history as well as type of instruction and exposure to French (see Appendix A). Two of them who had studied more than the three languages and not in the order of Chinese-English-French were eliminated. In addition, two others who did

[4] South China Normal University Nanhai campus was established by the joint efforts of South China Normal University and the Government of Nanhai District. It is a secondary college attached to SCNU but with the same level of standard in enrolling new students graduated from high school.

not have the similar exposure to French as others were eliminated. Thirdly, the remaining 20 subjects were grouped into two groups—high L2 English proficiency group and low L2 English proficiency group—based on their TEM-4 scores. The TEM-4 test is an official test organized by Advisory Committee of Foreign Languages Programs in Higher Education in China. It is a nationwide test designed for assessing English majors' overall English proficiency. It is conducted every year, and only year-two college students majoring in English are eligible for taking the test. This is a written test composed of listening, reading, vocabulary, grammar and writing. The medium of the scores of the twenty participants was used as the benchmark for dividing the participants into two groups. Finally, after the training session of the think aloud protocol (TAP) (which will be discussed later), none of them was found having problem in expressing out-loud what they were thinking in their head; therefore, all these twenty students stayed for the main study. The whole selection process is illustrated in the following Figure 3.1.

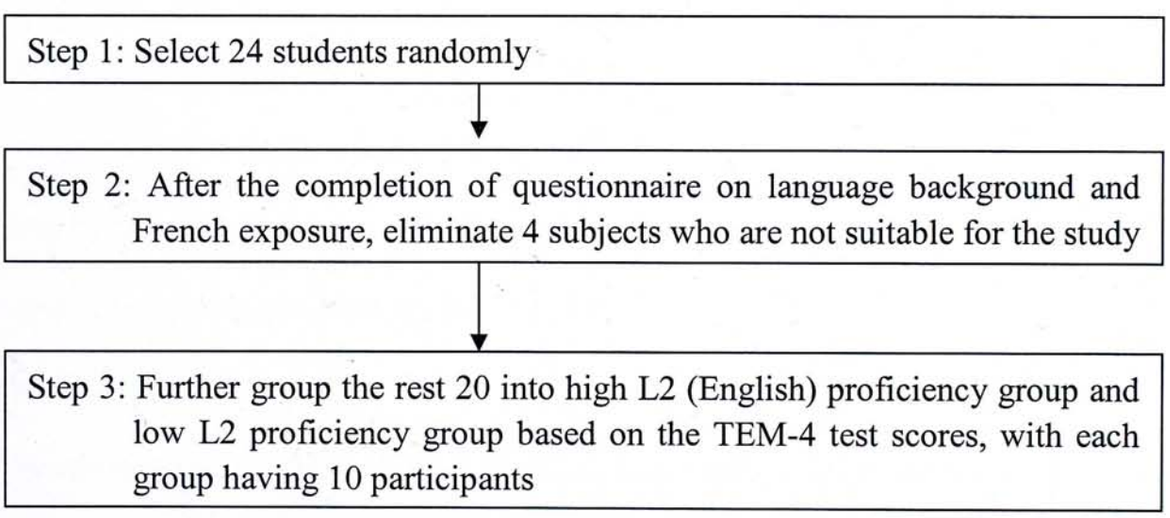


Figure 3.1. Sampling procedure

3.3 Data collection technique: The think-aloud protocol

The think-aloud method consists of asking people to think aloud while solving a problem and analysing the resulting verbal protocols. This method has applications in psychological and educational research on cognitive processes but also for the knowledge acquisition in the context of building knowledge-based computer systems (Someren *et al.*, 1994). The method was further refined by Ericsson and Simon (1980, 1993), in which they distinguished two verbalizing procedures: *concurrent verbal report* and *retrospective verbal report*. *Concurrent verbal report* includes *talk-aloud* and *think-aloud*—"where the cognitive processes, described as successive states of heeded information, are verbalized directly" (Ericsson & Simon, 1993, p. 78). Furthermore, in the *think-aloud* processes, there are levels of verbalization, the first being the "vocalization of covert articulatory or oral encodings" (Ericsson & Simon, 1993, p. 78), similar to *talk-aloud*; the second level involving description, or explication of the thought content "when the internal representation in which the information is originally encoded is not a verbal code" (Ericsson & Simon, 1993, p. 18). The second type of verbal report is *retrospective report*, "which is given by the subjects immediately after the completion of the task while much information is still in STM (short term memory) and can be directly reported or used as retrieval cues" (Ericsson & Simon, 1993, p. 19). The two types of verbalization are both used in this research. In the on-line comprehension task, the subjects were first asked to *think-aloud*, which is the first (or maybe second) level of verbalization, but after each sentence, they were asked to do the second level verbalization of the *think-aloud* and a *retrospective report* with prompt questions from the interviewer. The rationale for this practice is that the subjects of the current study are at the beginner level of learning a language. It takes them more working memory capacity to process the new language, as it is not yet automatized.

Therefore, giving them too high a processing load (speaking out their thoughts), may hinder the researcher to see all the thoughts going on in their head. This is the reason why a retrospective report was applied. In addition, as mentioned above, there are some thoughts which are not originally in the verbal code. They were also required to describe such thought content.

3.4 The warming-up (training) session of TAP

Subjects in the current study were asked to practice think-aloud with the researcher right before the actual task following the instructions (Appendix B), which lasted for 5-10 minutes. The research setting was at a cozy place, where the subject was ensured to feel at ease. The room was quiet, and the subject was settled comfortably with a glass of water at hand. First of all, an explanation was given about the general purpose of the research, about what was going to happen and about the protection of the verbal data. The instruction on thinking aloud was quite simple. The essence of the instruction was: perform the task and say out loud what comes to your mind. The subjects were asked only to describe what they thought, but not to evaluate how they were thinking. The purpose of this warming-up was to give the subject an opportunity to familiarize himself/herself with thinking aloud, while it also gave the researcher an opportunity to train the subject to stick to verbalizing his/her thoughts and not to interpret the thoughts. When the subject was working on the task, the role of the researcher was a restrained one. Interference occurred when the subject stopped talking. Then the researcher prompted the subject by saying "keep on talking" and raised some other questions as mentioned in the section of pilot studies. The training session ended and the real session started only when the subject was confident that he/she was feeling comfortable with thinking-aloud. The training task item was a relatively easy text

extract, as the purpose is to help them feel free of thinking aloud, not to add too much burden on their comprehension while the real task may need a lot of cognitive capacity. At the mean time, the recording devices were double checked to ensure that there would not be any unexpected problem. The complete session of the real task was recorded by two MP3 players that had been checked during the training session.

3.5 Research design

The research setting was in a quiet discussion room in the library of Nanhai campus. It was a one-to-one meeting. Subjects were scheduled to come one by one to the discussion room at the time of their own convenience and do the tasks with the researcher. They were given enough time to complete the following three empirical tasks one after another: an on-line comprehension task, a test on English past and perfect tenses, and a follow-up interview. The following sections will provide detailed introduction of each task.

3.5.1 Task one: On-line comprehension task (Data gathering technique: Think-aloud)

This task consisted of two parts; part one involved a text of passé composé in French while part two had twelve sentences of the same tense in French. The purpose of this task was to know about the process of the L3 learners' comprehension of French passé composé and the role of their prior linguistic knowledge. The subjects were asked to think-aloud while comprehending the French test and sentences.

The content of the comprehension task

For the part of "text" in this task, there was a general context of "time" given since the beginning, which said that all of the events happen "last night (*heir soir*)". For

the 12 sentences, however, they were out of context, but all with time adverbials indicating tense and aspect. The text was extracted from a famous text book for French beginners in China *Cour de Francais Accelere* (Sun, 2006), but it was not used in the Nanhai campus, which means that the subjects had not encountered the text before.

The second part of the comprehension task was composed of sentences of passé composé. These sentences came from three sources: *Manuel de Francais Langue Etrangere* (Wu & Wang, 1997), *The ultimate French review and practice: mastering French grammar for confident communication* by Stillman and Gordon (1999) and *Voilà!: a course in French for adult beginners* (Gonthier & Geoghegan, 2004). The rationale for choosing these twelve sentences was because the researcher tried to categorize the twelve items into four types of English equivalents, with each equivalent having three sentences. It is shown in the following Figure 3.2:

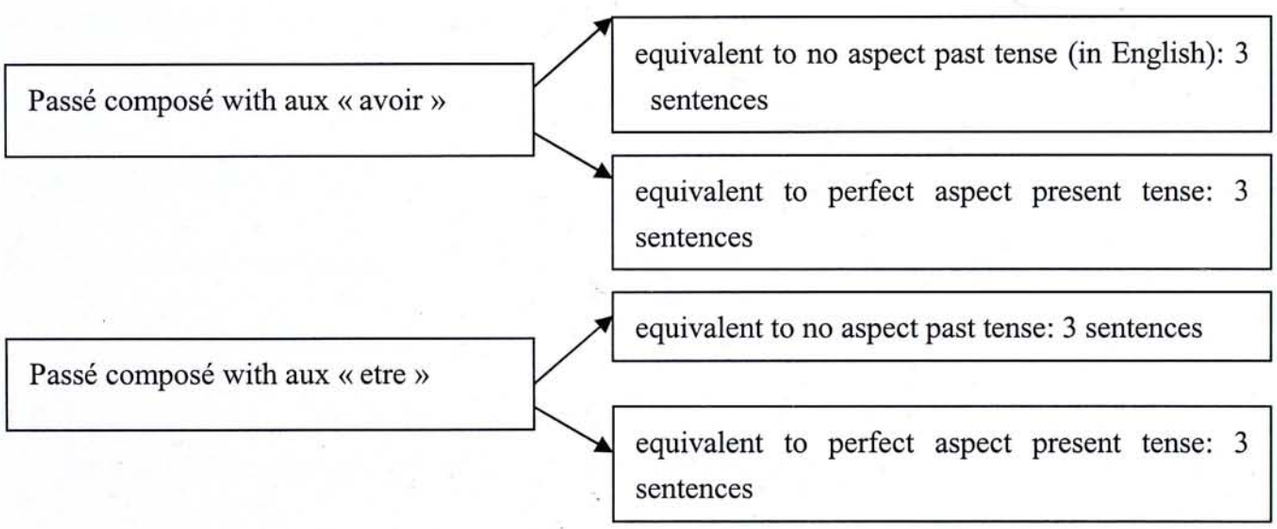


Figure 3.2. Categorizations of sentences in Task One

It was ensured that the difficulty of the text and sentences matched the participants' level of understanding in French, which is the beginner level. They knew most verbs in the task, but may have been unfamiliar with a few lexical words. Nevertheless, the meaning of these unfamiliar words was easy to be inferred from either the context or their previous linguistic knowledge.

The procedure of carrying out the task using think-aloud method

The most unique design about this task is that it involved two rounds. The first round was natural comprehension, where they comprehended as they normally do while using the TAP technique, and retrospected after each sentence by answering the interviewer's prompting questions. In order to detect more about their cross-linguistic assumptions, the following questions were asked after the comprehension of each sentence, such as "Did English/Chinese help/hinder you in understanding the sentence just now?", "Do you think English/Chinese is similar to French in this regard?" "Did you think of 'XX' in English/Chinese? Why?" The language for report could be either English or Chinese, or mixed. In the second round, they were asked to *translate* each sentence into English accurately, starting from the first one. But during this process, they did not need to report anything. The purpose of this second round of comprehension through translation was to tap into the learners' understanding of tense and aspect as the Chinese language does not have any tense marker. All test items had been double-checked by a native speaker of French and two professors of Applied Linguistics of Department of English of CUHK. The sample task items are as follows, for the complete version see Appendix C:

> Please read and comprehend the following text using the think-aloud method. Remember to stop and report more once you see the red dot.
>
> **Text 1**
>
> Hier soir, M. Lacan est rentrée a la maison a dix-neuf heures. ● Il a bavardé avec sa femme comme chaque jour. ●Puis leurs enfants ont regardé la television. ●Et M. Lacan a dit a sa femme: « je sor un instant. » ● il a pris son manteau et il est sorti. ●Il n'est pas revenu. ●Sa femme a attendu toute la nuit. ●

Assessment and analysis of the task:

The major purpose for this task was not to assess, but to analyze the learners'

processes of comprehension. Only a small assessment took place. Wrong comprehension (self correction is not counted as wrong), if there was any, would have one point of mark deducted for one place of error. Therefore, all the scores in this task were in the form of minus + number, which means that the highest score would be zero with no limit to the lowest. In this section of comprehension, the data was analyzed both qualitatively and quantitatively. The qualitative part was to find out the pattern of L3 French comprehension of groups of learners with different L2 proficiencies, especially when and how much they would use the knowledge of the previous language. The researcher also studied different types of transfer involved, intersubjectively, and intrasubjectively, e.g. item/system transfer and positive/negative transfer. It was relatively easier to find a negative transfer as it was usually manifested in errors. However, it was much harder to detect positive transfer or positive effect on L3 comprehension. The researcher thus developed a rationale for judging whether there was positive or negative transfer involved (see Figure 3.3). As for the quantitative analysis, based on their performance of comprehension from the second round (which is actually a translation), a comparison was made between the two proficiency groups.

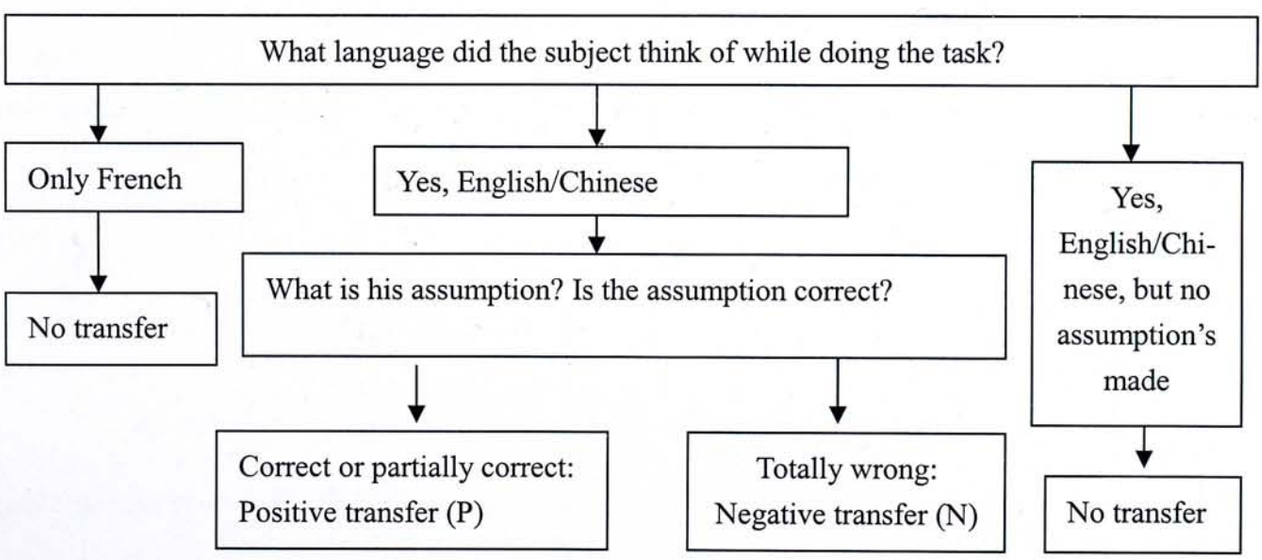


Figure 3.3. Rationale for judging the nature of transfer

3.5.2 Task Two: a test on English past and perfect tenses

The purpose of doing this task was to compare the students' performance of comprehending the passé composé with their actual understanding of the past and perfect tenses in English. The rationale behind this task was to find evidence for CLI, through *cross-linguistic performance congruity* (for detail, please refer to the previous chapter). Furthermore, it also aimed to see in particular, if the learners know perfectly well for which situation they should use present perfect or simple past tense. This is essential in the comprehension of French passé composé, as it is closely related to how they tend to equate the French past tense with English. It thus made it possible for the researcher to find out the reason of transfer from this task.

This task was adapted from Chalker (1992. p. 25), "Exercise 32 Past simple or present perfect? [SGE 4.5-8]" The exercise was originally in the form of a cloze text. The researcher modified the exercise into a choice of two alternatives, instead of the original sentence completion. This exercise specially dealt with simple past and present perfect tense in English grammar. The whole task consisted of 21 items (please see Appendix E).

This test was scored; each verb form took one point. The scores were used to compare with the transfer in tense and aspect identified from the previous comprehension task.

3.5.3 Task three: a follow-up interview

After completing the previous two parts of the empirical task, the researcher was able to talk with the subjects directly about their metalinguistic awareness of the association of English simple past or present perfect tense with French PC (An example is provided in Appendix G). The reason for not putting these interview questions in the

probing questions during Task One was because the researcher did not want to interfere with the learners' natural and intuitive comprehension of PC. The sample interview questions are as follows:

1. I found that in the comprehension, you tend to associate the PC of "*avoir*" structure with present perfect tense in English, do you think they are the same?
2. It seems that you think PC means present perfect tense in English, but why are you using a past tense here?
3. You see here, the event happens "yesterday," but why are you using a present perfect tense? Is it because of the structure of "*avoir*," which looks like "have done" in English?

From this interview, the researcher was able to tell more in depth the reason underlying their perception of PC without a formal instruction on cross-linguistic similarity between English and French.

3.6 Materials

In summary, all the materials used in the studies were as follows:

1) A self designed bio-questionnaire about the learners' language background, and type of instruction and exposure to French
2) An adapted comprehension task on French passé composé
3) An adapted test on English past and perfect tenses
4) Collected scores on TEM-4 test (official test), and English grammar test (taken in the second year of college. This test was the final exam of a required course of "English Grammar")

3.7 Data processing

Transcription

All the think-aloud data were transcribed. The data was originally in three languages, Chinese, English and French. A sample transcription is provided in Appendix F. Only in this sample the Chinese was translated into English for the convenience of the reader. In the other transcriptions, the Chinese has remained in its original form. The reason for this practice was because the process of translation inevitably made the report lose its original implication in Chinese which was essential in the comprehension process, as Chinese does not have a verb marking of temporality, but English has. Keeping its original form made it easier and more accurate for the coding and analysis.

Coding

A preliminary coding scheme was developed by the researcher. There were three levels of coding. The first level was the categorization of information from the verbal reports involving the actual "lexical activation," the "content of second round comprehension," and "other remarks." The last category involved the descriptions of some specific thoughts that the subject has reflected on, or responses to the probing questions; it was where instances of transfer were detected. The second level of coding involved the quantification of transfer which was identified from the first coding, such as lexical transfer, transfer in tense and aspect morphology, and syntactic transfer. In addition, the nature of transfer was also coded, positive or negative. The third level was the coding of errors and instances of noticing of errors. Details of the coding scheme will be introduced in the next chapter. In sum, the researcher did the following codings:

1. Language of activation and source of transfer: words of activation (excluding repetitions) and counting total cases of transfer.
2. System and item transfer in tense and aspect morphology, depending on their reports and also answers from the interview. Decide on the nature of the transfer[5], whether it is positive or negative transfer.
3. Error count: counting error in second round comprehension (overall errors)
4. All other cases of transfer (e.g. "L" for lexical, "S" for syntactic), and their nature of transfer: positive or negative.

For the third task (interview), the researcher coded two important aspects of remarks, the first being the metalinguistic awareness of the similarity between English and French PC, secondly the rate of noticing of errors and corrections.

Scoring

In the comprehension task, points were deleted one for each error. The final scores were used for the comparison between the two L2 proficiency groups. In the English grammar test, accurate responses were scored. Correlation analyses between these scores and the transfer rate in tense and aspect were run.

3.8 Data analysis

This study had two components of data analysis, qualitative and quantitative. The qualitative analysis was for the purpose of answering research question two in particular. It involved two sections in parallel. The first section was the analysis across 20 participants, in terms of the source of transfer, the pattern of transfer, and the reason underlying such transfer in tense and aspect. The researcher analyzed the general pattern of transfer in answer to the inquires such as when does transfer happen and why there

[5] The coding of positive transfer is only judged from what they have reported, not from the researcher's own observation, but for negative transfer, it is recognized mainly from the errors.

are more transfer from one source language than another? As for the focus of this study, transfer in tense and aspect, the researcher looked at how the subjects equated PC with English tenses, and why they exerted different patterns. The second parallel section of the qualitative analysis was the cases studies. Some participants with interesting patterns of transfer were investigated for further analysis.

The quantitative component of analysis consisted of several sections, for answering Research Question 1, 3 and 4. General descriptive analysis was conducted to analyze the source of transfer and the types of transfer. Correlation analyses were run to explore the relationship between the type and the nature of transfer in tense and aspect and the three test scores (TEM-4 scores, the English grammar test scores and the Task Two scores), while a t-test was adopted to find out if there is significant difference in overall performance between the L2 proficiency groups.

4 CHAPTER FOUR

GENERAL RESULTS

4.1 Introduction

The previous three chapters described the background, reviewed the literature and delineated the methodology of the research. The findings of this study are explicated in the following three sections in this chapter: the first section provides an overview of how the tasks were actually conducted; the second section describes the nature of the coding scheme and how it was developed from the 20 think-aloud protocols. The third section presents the findings in answer to each Research Question addressed. For Research Questions One, Three and Four, as they are quantitative in nature, figures and tables will be presented first with further discussion to be conducted in the next chapter. Research Question Two, which is qualitative in nature, is presented last. General and important results of this research question are given in this chapter, while a detailed discussion will be provided in the next chapter.

4.2 General results on how the tasks were completed

Four instruments were used during the one-to-one empirical tasks, namely, questionnaire on language background, Task One comprehension, Task Two English grammar test and Task Three follow-up interview. The following are descriptions of how they were conducted and the reports of the general results of the tasks.

Bio-questionnaire: 24 students of an intact class agreed to take part in the present study. Four of them were eliminated afterwards. Of these four, two were eliminated because they learnt Spanish in addition to English and French. Two others had much more exposure time in French than the average amount of students' exposure time as they were learning from another text book written in French. Regarding the type of

instruction the 20 participants received in French, it has the following characteristics as generalized from the 24 questionnaires: Mother tongue is used as medium of instruction; there is an isolated vocabulary list with Chinese-French translation at the end of the textbook; no contrastive analysis is given by the teacher between English and French, but sometimes between Chinese and French; communication skills are emphasized as they use textbooks imported from the native country, but there is still a lot of grammar drilling in class. The time of outclass exposure to French ranges from 2-6 hours with an average of 2.8 hours per week. However, they often read textbooks and other materials and practice French grammar much more than usual during the "revision week" before the final exam, taking an average time of 10 hours.

Task one: comprehension. There were two rounds in Task One. In the first round, natural think-aloud comprehension, students were given the freedom to choose the language they wanted to report in, and as expected, all of them chose to report in Chinese, especially in the "retrospective" stage. However, their languages were mixed concerning the content of the comprehension as a lot of them associated French words with English to help them comprehend. But during this first round comprehension, just as in the pilot study, very few of them mentioned anything about tense. They focused primarily on the meaning of the words, and totally forgot about tense, or probably they did not need to think about tense if they decided to report in Chinese. Another major finding is that, concerning the words of activation, the dominant source language of activation is Chinese. If there were English words being activated, usually they were activated at the same time with the Chinese meaning. Often the students would report on the meaning of the sentence in Chinese in the "think-aloud" stage, and then remarked in the "retrospective stage" that they also thought of English, as the French word is similar to the English word "XX". Most of them said that that they were not used to

thinking in English if there was no French-English cognate, except for two or three of them who always had the habit of thinking in English. In the second round comprehension, when they were forced to comprehend in English, they suddenly realized that there was the issue of tense. Therefore, a lot of them experienced the processing load, and told the researcher in the follow-up interview later that they felt it was really difficult to translate the Chinese meaning into English while at the same time paying attention to tense in English, which they did not think about in the first round at all. Quite a number of them noted in the interview that they had no idea what they had said in the second round comprehension, as it was very hard for them to attend to so many things at the same time—to choose from different tenses that they know in English. Except for one student who was very confident with her translation, the others were very uncertain about whether the tenses they had chosen were correct or not. In general, the whole process of Task One took an average of 30 minutes for completion.

Task Two: test on English past and perfect tenses. The aim of the task was to see whether the participants had a good knowledge of the distinction between simple tense and present perfect tense, and to compare this result with their comprehension of French PC. Most participants finished the test of 21 items in less than 10 minutes. None of them were aware of what this test was for until in the follow-up interview when they were asked explicitly about the equivalent tenses in English to French PC. The average of scores in this task is 16/21 with a standard deviation of 1.7, which means that the variation of the scores is not great.

Task Three: follow-up interview. This part took 10 to 20 minutes, subject to how much the learner wanted to say about how he/she did in the first task and his/her ideas on the similarities and differences between French PC and English past and perfect tenses. For those participants who were originally confused about French and English

tenses, or as they said, "never formally compared the two languages in tense," they did not do quite well in the first task. Therefore, it took them longer time to discuss with the researcher in Task Three, notice where they went wrong, and learn how to contrast the two tense systems. Finally, two other test scores were collected after all the tasks were completed. Participants had been asked to bring the grades of the following two tests to the research site and report their English grammar test scores (which was conducted in the second year of college) and TEM-4 test scores (official test organized by Advisory Committee of Foreign Languages Programs in Higher Education in China) to the researcher, for the later analysis. The English grammar test was the final exam of their compulsory course called "English grammar." This course and also the final exam covered a wide range of English grammar items from the level of words to the level of sentences, while the exam was mostly in the form of multiple choice.

Generally, the students were very cooperative in both think-aloud reports and the follow-up interview. They said as much as they could for 40-60 minutes, varying from participant to participant. As the empirical study was done in a consecutive (one by one) and face-to-face (one-to-one) manner, they were asked to keep the content of the tasks confidential to the other students as they were in the same intact class. According to the researcher's knowledge, all of them kept their word.

After showing the general situation of how the tasks were actually conducted, the next section will introduce how the coding scheme was developed from the think-aloud protocols.

4.3 Describing the coding scheme

The previous chapter discussed how the coding scheme employed by this study was developed and constructed through the pilot studies. In this section, a more detailed

coding scheme with specific codes is provided. There are three levels of coding. The first level is to abstract the full transcriptions of the think-aloud into different categories of report. The first category is "activation of words in Chinese/English," where the participants merely spell out the single words, or word chunks in the comprehension process. In this process, the words are not activated in order; there may be jumps from one word to another, or repetition of one word several times, sometimes even in two different languages. If there is comprehension of one word in both languages, the researcher puts the English and Chinese words activated for that French word into both columns, and marked the one that was activated first. Whenever they started to describe their thoughts instead of comprehending the content, or saying anything metalinguistically concerning tense or syntax, this part of report was put into the second category—"the other remarks"—what the students said about his/her process of thinking immediately after the comprehension of that particular sentence. This is also called retrospective report, in which the participants may add more detailed thinking process which they were not able to report during the first stage of the think-aloud process (the example of first level of coding see Appendix G).

In the second level of coding, the researcher developed specific codes for each type of transfer. In total, from the self introspective report in the first round (natural comprehension) and second round of comprehension (informal translation from French to English), the researcher found four different types of transfer under two major categories: "transfer in tense and aspect" and "other types of transfer" with the former as the focus of this study. In the category of "transfer in tense and aspect," there are item transfer in tense and aspect (IT) and system transfer in tense and aspect (ST). Under "other types of transfer," there are lexical transfer (L) and syntactic transfer (S). For each type of transfer, two subordinate categories are also investigated in parallel; they

are source of transfer (whether it is from English or from Chinese) and nature of transfer (whether it is positive, negative or unclear). Therefore, all seven possibilities of codes in the coding scheme are shown in Table 4.1. One thing to be noted is that for item transfer in tense and aspect, positive system transfer in tense and aspect, lexical transfer and syntactic transfer, there is no transfer from Chinese. In other words, transfer from Chinese is identified only in system negative transfer in tense and aspect. Therefore, for these categories—IT, STP, L and S—there is only one possibility, that is IT (Eng), STP (Eng), L (Eng) or S (Eng), with "(Eng)" presumed and thus omitted in the actual coding. The same with syntactic transfer (S); the only possibility for S is SP, as there is no negative transfer identified in this study concerning syntax (here the "syntax" meaning word order) from either language. And for "item transfer in tense and aspect" particularly, this is a category that the researcher deliberately separated from simple lexical negative transfer even though they are similar in nature. Item transfer in tense and aspect is different in the sense that the English and French words being associated are grammatical morphological words, which can directly result in the wrong/right use of tense and aspect. For example, if someone says that *Vous avez réparé le télécopieur ce matin* means "Have you repaired the fax machine this morning" is because *avez réparé* looks like "have repaired," which is not an appropriate expression in English, this shows that the participant has the wrong message about French passé composé because of this one-to-one equivalence. However, for this type of transfer, no case of positive transfer is found as there is a lack of evidence that the participants always associate PC with auxiliary *avoir* with the English structure of present perfect "have/has done." But rather, in some other sentences with the same auxiliary verb, all the participants used tenses other than present perfect, such as simple past tense. For examples of the second level coding, please also refer to Appendix G.

Table 4.1

Types of transfer identified

Transfer in tense and aspect (or transfer in grammatical morphology)	System transfer of tense and aspect: ST	From Chinese	Negative: STN (Chi)
		From English	Positive: STP
			Negative: STN (Eng)
	Item transfer in tense and aspect (IT: all from English)	Negative:	ITN
Other types of transfer	Lexical transfer	Positive:	LP
		Negative:	LN
	Syntactic transfer	Positive:	SP

The third level of coding is to calculate accuracy and to code reasons for errors in tense and aspect (The example of participant #1 is provided in Appendix G). There are in total three possible reasons for errors in tense and aspect identified, namely, negative transfer (which was already coded in the second level of coding), and lack of proficiency in English (ProE) or in French (ProF). Adding these two categories is due to the fact that a lot of errors have been found in tense and aspect which cannot be attributed to negative transfer. For the first category (ProE), for example, a lot of them say "She didn't went [*sic*] to the office that day" or "I haven't write [*sic*] it." These clearly show that they have the right assumption and understanding about the French PC and English tenses, whereas they fail to monitor their production well which results in morphological errors. The other category—lack of proficiency in French (ProF)—refers to the situation that some errors in tense are unable to be traced back to the participants' wrong system association of French PC with English tense, but to the incorrect recall of meaning of the time adverbial, which plays an important role in judging tense. The right assumption they hold about PC and English tenses is reflected in their own reports in the follow-up interview when they were asked about the reason why they used this tense instead of others. And they remarked that they did not know the particular French word

in the time adverbial. After the researcher told them what it meant, they immediately realized that they used the wrong tense and made a correction.

4.3.1 The criterion for judging the case of transfer and its category: how is a case of transfer identified?

Lexical transfer:

This research differentiates lexical transfer from lexical representation. It is found that lexical representation in the participants' mind is either the mapping between French and Chinese only, or French with both Chinese and English (Chinese is dominant); however, at this moment the researcher is not able to tell the levels of representation for either situation. According to Jarvis and Pavlenko (2008), there are multiple ways in which the new word might become mentally associated with a word in an already-known language. Word-related knowledge is represented at three distinct levels; they are lexeme, lemma, and concepts (e.g. De Bot, 2004b; Levelt, 1989; Pavlenko, 1999). From the report of the participants, the researcher could only make preliminary judgment that when they map a French word with both English and Chinese words, they are linking the French lexemes with the English lexemes, but for Chinese, they are linking them with lemma or even concepts. It can be assumed that lexical mapping between French and Chinese is natural (which is shown by the dominant activation of Chinese words in the think-aloud protocol), as the textbook is French-Chinese, and the medium of instruction is Chinese mixed with French. Therefore, lexical mappings are mostly French-Chinese. Because of the above reasons and the impossibility of looking into lexical representation of each word, lexical representation will not be dealt with in this study. On the other hand, the identification of lexical transfer is from the report of participants, especially positive lexical transfer.

That is to say, whenever there is remark by the participant saying that he/she uses English to memorize the word, or he/she thinks that this word is close to an English word, or he/she often associates this word with an English word, and this association or mapping with English helps him/her comprehend French, then a case of positive lexical transfer from English is identified. It can be seen that the definition for a positive or negative transfer in the present study is based on the assumption or attempt of the speaker, but not on the actual product. If the learner associates a French word with an English cognate (if it is correct) and it helps him/her comprehend, it is believed that this assumption has a positive effect on the comprehension, which is thus positive.

Transfer in tense and aspect:

In the previous chapter, the researcher has explained why a second round of comprehension (informal translation from French to English, in other words, to repeat the first round comprehension again, but in English) was added into the comprehension task according to the result from the pilot study. It is because after the think-aloud carried out in the comprehension task, no mentioning of tense was found in the students' reports. This is unexpected and the researcher decided to ask the students about the reason in the follow-up interview. They explained that they would ignore tense if they were not asked to pay attention to it; they would only process meaning. Then the researcher asked which language they would use if they were forced to understand tense. They said that they would definitely think of English despite still mapping the individual word meaning with Chinese. As a result, when they have to process tense, it takes them much longer time, as they would first process meaning in Chinese, and then tense in English, especially for those who are used to activate Chinese to process the French word meaning. Having said all that, the fundamental assumption in judging transfer in tense and aspect is a little different from lexical transfer as the researcher

would not judge from the report by the participants but from their results of comprehension in the second round. If in the informal translation the participant gives a correct form in tense and aspect, it is identified as positive transfer from English; if not, and it is not temporally marked, it is regarded as negative transfer from Chinese. If it is marked but marked wrongly, it is a negative transfer from English. On the basis of identifying cases of transfer, each code is given a definition as shown in Table 4.2.

After giving a description on how the cases of transfer are identified, coded and calculated, the next section is going to provide answers to each of the research questions raised in Chapter Two by showing results obtained from the above calculation and further analysis from the SPSS programme.

Table 4.2

The coding scheme

Codes	**Definition**
STN (Chi): System negative transfer in tense and aspect from Chinese	The participant does not mark any tense or aspect where it is needed.
STN (Eng): System negative transfer in tense and aspect from English	The participant marks the tense and aspect, but with a wrong assumption about the association between French PC and English
STP: System positive transfer in tense and aspect	The participant marks the tense and aspect correctly
ITN: Item negative transfer in tense and aspect	The participant marks the tense and aspect wrongly, and it is because he/she holds a one-to-one equivalence between a French word of grammatical morphology and an English one.
LP: Lexical positive transfer	If the participant remarks that: "This word is similar to/ makes me think of the English word "XX"; it helps my understanding of French," and the assumption is correct.
LN: Lexical negative transfer	If the participant remarks that: "This word is similar to/ makes me think of the English word XX", but the association is wrong.
SP: Syntactic positive transfer	If the participant remarks that "I think this sentence structure/word order is similar to the English equivalent," or "this is close to the English word order, but a little different in the sense that in English, the XX (e.g. time adverbial) should be moved to the front/the end."

4.4 Answers to Research Question 1: what is the major source of transfer in the comprehension of French passé composé? Will L2 proficiency influence the source of transfer?

Overall speaking, the dominant source of transfer in the comprehension of French text and sentences of passé composé is from English, taking up 95% (1159 cases) of the total cases of transfer (see Table 4.3 and Figure 4.1), while transfer from Chinese is very scarce, only 5% (62 cases). If one further looks at the situation for different types of transfer, it can be seen that lexical transfer takes up a large proportion (61.03%) of transfer in total (see Table 4.4), and as mentioned earlier, all lexical transfer is from English. This may be able to account for the large number of transfer from English in total.

Table 4.3

Source of transfer in total

	Raw number	Percentage
Transfer from Chinese	62	5%
Transfer from English	1156	95%

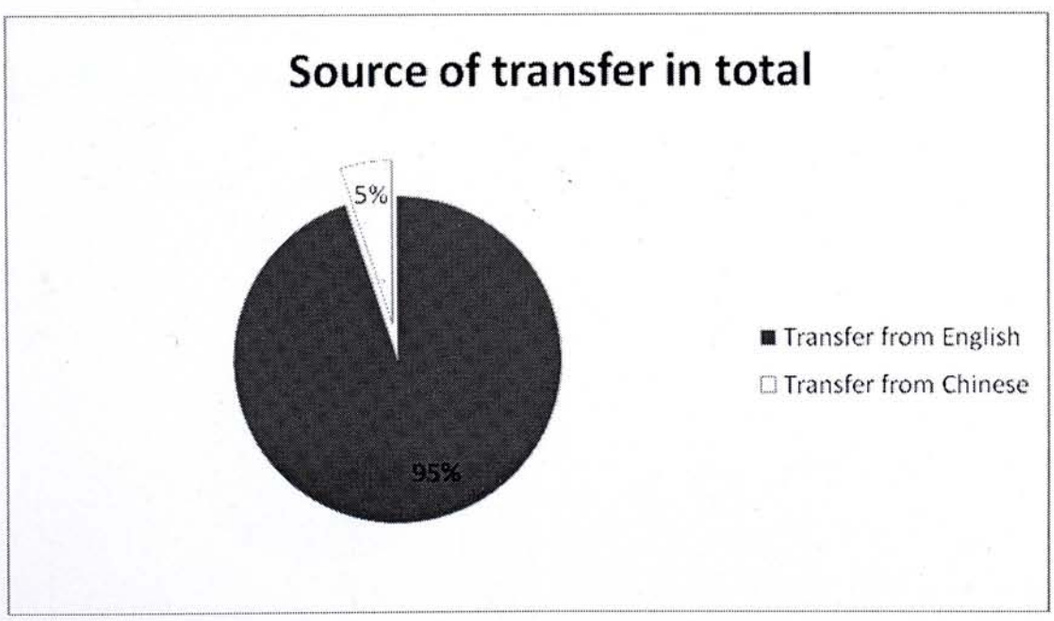


Figure 4.1. Source of transfer in total

Table 4.4

Percentages of different types of transfer

Types of transfer	Raw number	Percentage
Lexical	722	61.03%
Transfer in tense and aspect morphology	416	35.16%
Syntactic	80	6.76%

As for transfer in tense and aspect (see Table 4.5 and Figure 4.2), one can still see a dominance of transfer from English, accounting for 85% of the total cases of transfer in tense and aspect. The number of transfer from Chinese has increased as all cases of transfer from Chinese are transfer in tense and aspect. If one looks closely at the nature of transfer in tense and aspect (in total 416 cases), positive transfer takes up a larger percentage (68%) than negative transfer (32%), with the former having more than double the amount of the latter (see Table 4.6), and in this study, positive transfer in tense and aspect (STP) comes entirely from English. That is also a reason why there are much more transfer in tense and aspect from English than from Chinese.

Table 4.5

Source of transfer in tense and aspect

	Raw number	Percentage
Transfer from Chinese	62	15%
Transfer from English	354	85%

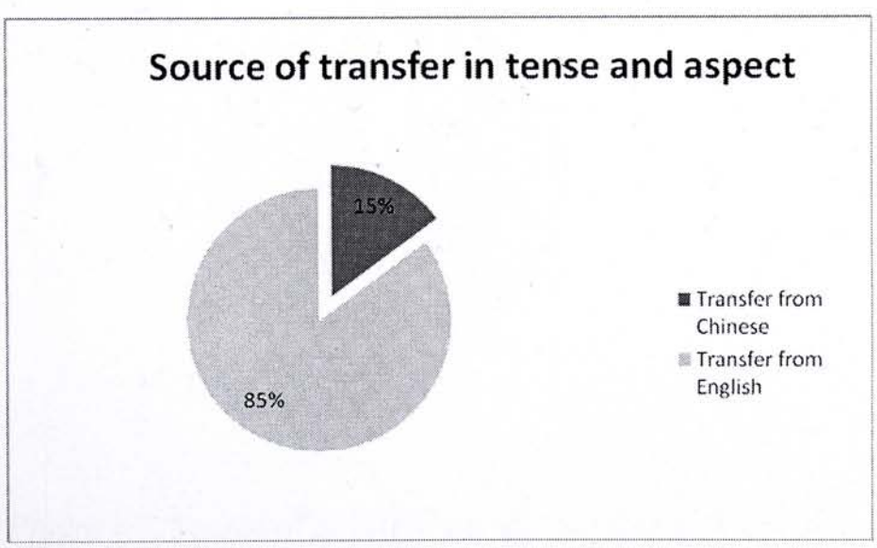


Figure 4.2. Source of transfer in tense and aspect

Table 4.6

Nature of transfer in tense and aspect

	Raw number	Percentage
Positive	283	68%
Negative	133	32%

The amount of transfer from Chinese increases (47%) only when negative transfer in tense and aspect is involved. As can be seen in Figure 4.3, the number of cases of negative transfer from English and Chinese is much closer to each other, with percentages almost even. Interestingly, the number of negative transfer from Chinese finally soars to surpass that from English in the system negative transfer (STN) in tense and aspect, with the former almost twice as much as the latter (see Figure 4.4).

Table 4.7

Source of system negative transfer in tense and aspect

	Raw number	Percentage
Transfer from Chinese	62	63%
Transfer from English	36	37%

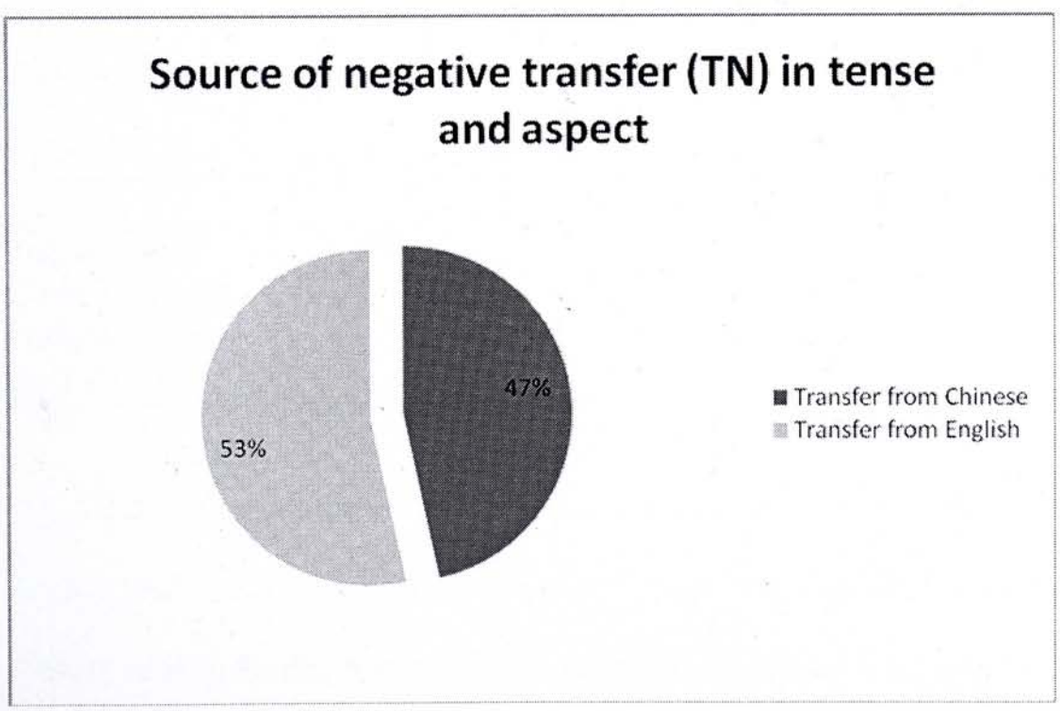


Figure 4.3. Source of negative transfer in tense and aspect

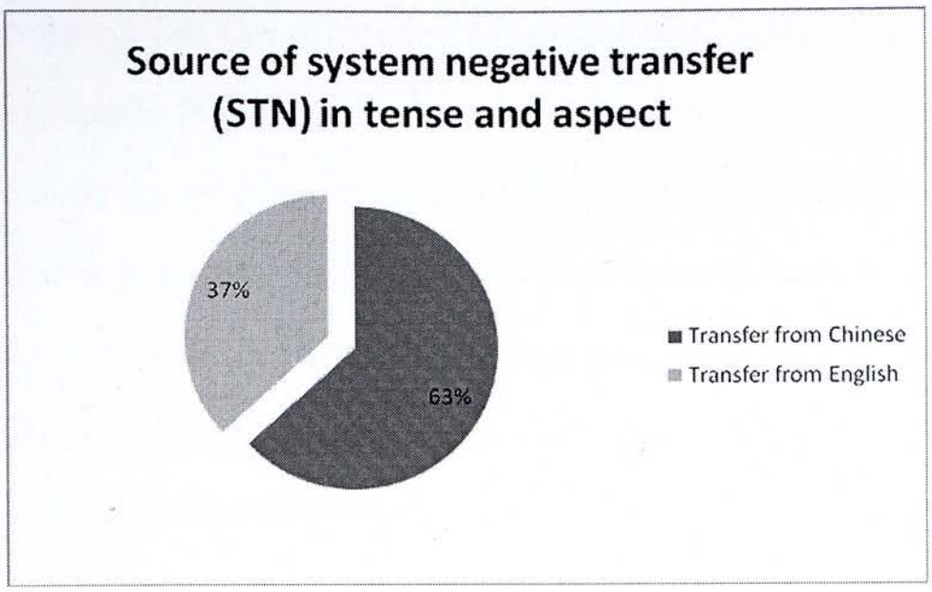


Figure 4.4. Source of system negative transfer in tense and aspect

To answer the sub-question of whether L2 proficiency will have an influence on the source of transfer, a correlation analysis was run between the transfer rates from Chinese/English and the general L2 proficiency. Results show that there is a very weak positive correlation between transfer from Chinese in total and the general L2 proficiency ($r(20) = .143$), and virtually no relationship between transfer from English in total with general L2 proficiency ($r(20) = -.001$).

Table 4.8

Pearson correlation between the source of transfer and TEM-4 scores

	TEM-4 scores (General L2 proficiency)
Transfer from Chinese in total	r = .143, Sig. (2-tailed): .548
Transfer from English in total	r = -.001, Sig. (2-tailed): .996

It is further confirmed in the think-aloud protocols that not all students with high English proficiency would like to associate French with English to help them in learning French, while a French learner with a low proficiency score in L2 English may be very good at using contrastive analysis in learning French tense (and other grammatical items), such as subject #17, who got the lowest TEM-4 score, but did best in the

empirical Task One of the present study. The next chapter will give more detailed explanation from the introspective and retrospective report on why the behavior of transfer may be related to the learner's learning style, the habit of language processing or even instruction, and the source of transfer may be random.

In summary, as expected, when all the cases of transfer are considered, the dominant source of transfer is from English. Only for system negative transfer in tense and aspect, more transfer from Chinese than from English is observed.

4.5 Answers to Research Question 3: Is transfer in tense and aspect related to general L2 proficiency or the different understandings of English past and perfect tenses?

4.5.1 Some general descriptive analysis of transfer in tense and aspect

There are four categories of transfer in tense and aspect. The two major categories are item (only negative, and all from English—ITN) transfer and system transfer (ST). Within system transfer, there are negative (STN) or positive transfer (all from English, STP), and within negative system transfer, there are transfer from Chinese (STN (Chi)) or from English (STN (Eng)). The table showing original raw data of total transfer in tense and aspect is presented in Appendix H, whereas

Table 4.9 to Table 4.13 demonstrate the percentages of each type of transfer in tense and aspect.

Table 4.9

Type of transfer in tense and aspect

Transfer in tense and aspect	
Cases of ITN	Cases of STN
35	381
8.41%	91.59%

As can be seen from Table 4.9, item transfer only takes up a very small percentage of total transfer in tense and aspect, less than 10%. System transfer takes the dominance in the transfer in tense and aspect.

Table 4.10

Transfer in tense and aspect (source)

Transfer in tense and aspect	
From English (ITN+STP+STN (Eng))	From Chinese (STN (Chi))
71	62
53%	47%

As mentioned earlier, only in system transfer of tense and aspect can transfer from Chinese be found. The number of cases of system transfer from Chinese is almost even to all cases of transfer in tense and aspect from English, nearly half of the total cases of transfer in tense and aspect (47%).

Table 4.11

Transfer in tense and aspect (nature)

Transfer in tense and aspect	
Positive (STP)	Negative (ITN +STN (Chi)+STN (Eng))
283	133
68.03%	31.97%

As regards the nature of transfer in tense and aspect, a very positive overall picture of transfer in tense and aspect is observed as there is more than double the amount of positive transfer (68%) than negative transfer (32%).

Table 4.12

System transfer in tense and aspect

System transfer in tense and aspect	
Cases of STP	Cases of STN
283	98
74%	26%

Looking at system transfer specifically, this contrast is even more obvious. The number of positive transfer cases is almost triple the amount of the negative. However, 26% of negative transfer is not a small amount per se. For this 26% percent, the first possibility is that it shows the learners' English knowledge system about tense is not accurate and complete enough (they are not able to distinguish tenses of simple past and perfect present well), or it may show that some of them make systematically wrong connections with English and French tenses—there are more tenses in English being linked with French PC than the only two possible tenses. These guesses of French PC vs. English tenses will be discussed in detail in the next chapter in the discussion of Research Question 2.

Table 4.13

Negative system transfer in tense and aspect

Negative system transfer in tense and aspect (STN)	
Cases of STN (Chi)	Cases of STN (Eng)
62	36
63%	37%

As can be expected, the negative system influence in tense and aspect is mainly from Chinese, taking more than 63% of all while there is only 37% from English. From the report, the typical case is that the Chinese learners tend to forget about tense totally and translated the sentences in French PC into present tense in English.

4.5.2 Relationship between transfer (in tense and aspect) and other variables

The other variables in the present study that were previously hypothesized to have a relationship with transfer is a) general L2 proficiency—TEM-4 scores, b) general English grammar proficiency—English grammar test scores and c) knowledge of English past and perfect tenses—Task Two scores. The TEM-4 scores and the general

English grammar scores were collected after the empirical tasks. An introduction about these three tests has been given in Chapter Three. First of all, Pearson correlation analyses were conducted between the scores of these three tests. Results indicate that TEM-4 test scores are not correlated with any of the other two test scores, with $r(20) = .079$ and $r(20) = .077$ respectively. However, it suggests that Task Two scores and general English grammar scores are positively correlated, with $r(20) = .387$ (see Table 4.14 for detail), even though not significantly. This is reasonable as both of them are tests about English grammatical features, except that one of them is more specific than the other. Nevertheless, these three tests seem to be three independent measures for different types of proficiency.

Table 4.14

Pearson correlation matrix among two test scores and Task Two scores

	TEM-4 scores	Task Two scores	English grammar scores
TEM-4 scores	1	r = .079, Sig.= .713	r = .077, Sig.=.722
Task Two scores	r = .079, Sig.= .713	1	r = .387, Sig.= .062
English grammar scores	r = .077, Sig.=.722	r = .387, Sig.= .062	1

After coding and counting each type of transfer, all the figures were put into the SPSS 18.0. Correlation analyses were run to see the relationship between different types of transfer in tense and aspect and the three aforementioned test scores respectively.

a) The relationship between transfer in tense and aspect and Task Two scores

Table 4.15 shows that the number of positive system transfer in tense and aspect is significantly correlated with the Task Two scores (test on English past and perfect tenses), with $r(20) = .556$ and $p < .05$. This suggests that the better the learners understand the difference between English simple past and present perfect tenses, the more correctly they associate French PC with English past and perfect tenses.

Table 4.15

Correlation matrix between system positive transfer in tense and aspect and Task Two scores

	STP	Task Two
STP	1	r = .556*, Sig.= .011
Task Two	r = .556*, Sig.= .011	1

*. Correlation is significant at the 0.05 level.

The correlation between negative transfer in tense and aspect (including both item and system transfer) and Task Two scores is statistically negative, with $r(20) = -.611$, $p < .01$. The co-efficient value r is even stronger than that of STP vs. Task Two scores, and more statistically significant ($p < .01$). In other words, if the learners cannot distinguish English past and perfect tenses, it is very likely that he or she is going to have negative transfer (be it item or system) in the comprehension of French PC, and the same conversely.

Table 4.16

Correlation matrix between negative transfer in tense and aspect and Task Two scores

	TN	Task Two
TN	1	r = **-.611****, Sig.= .011
Task Two	r = **-.611****, Sig.= .011	1

**. Correlation is significant at the 0.01 level.

Table 4.17

Correlation matrix between system negative transfer in tense and aspect and Task Two scores

	STN	Task Two
STN	1	r = **-.616****, Sig.= .004
Task Two	r = **-.616****, Sig.= .004	1

**. Correlation is significant at the 0.01 level.

Looking at system negative transfer in tense and aspect only (as shown in Table 4.17), it has a more statistical negative correlation with Task Two scores ($r(20) = -.616$, $p < .01$) than the correlation between Task Two score and total negative transfer in tense and aspect.

b) The relationship between transfer in tense and aspect and English Grammar scores

Correlation analyses were run between STP/TN/STN/STN（Eng）and English Grammar scores. Results are shown in Table 4.18.

Table 4.18

Correlation matrix between the nature of transfer in tense and aspect and English grammar scores

	English Grammar scores
STP	r = .365, Sig. (2-tailed): .114
TN	r = .-371, Sig. (2-tailed): .107
STN	r =-.341, Sig. (2-tailed): .141
STN (Eng)	r =-.235, Sig. (2-tailed): .319

None of the above types of transfer show statistical correlation with English grammar scores (all having p value more than .05). But the trend of positivity and negativity can still be observed. STP has a positive correlation with the English Grammar score ($r(20) =.365$), which means that if more system positive transfer can be found in an L2 English learner of L3 French, the person is likely to possess a higher score of general English grammar. As for negative transfer in tense and aspect, it will be less if the person has a higher English grammar test score. It is the same with system transfer (whether from English or Chinese) and even system negative transfer in tense and aspect from English.

c) The relationship between STP/TN/STN/STN (Eng) and TEM-4 scores (general English proficiency)

Correlation analyses were run between STP/TN/STN/STN (Eng) and TEM-4 scores. Results are shown in Table 4.19.

From the following table, one can conclude that transfer in tense and aspect has no relationship with general L2 proficiency. All the Pearson *r* values are close to zero. Some even show very strange results opposite to the previous correlation co-efficients in other sessions. For example, the system positive transfer in tense and aspect (STP) has a negative correlation with the general L2 proficiency ($r(20) = -.103$) while negative transfer in tense and aspect (TN) has a positive correlation with general L2 proficiency, which is against expectation. In other words, having high L2 proficiency/low L2 proficiency does not predict that the participant will have more/less positive transfer in learning French PC, and vice versa.

Table 4.19

Correlation matrix between the nature of transfer in tense and aspect and TEM-4 scores

	TEM-4 scores (General L2 proficiency)
STP	r = -.103, Sig. (2-tailed): .666
TN	r = .065, Sig. (2-tailed): .785
STN	r = -.016, Sig. (2-tailed): .141
STN (Eng)	r = -.035, Sig. (2-tailed): .882

Interested to know whether general L2 proficiency has anything to do with other types of transfer, the researcher further ran correlation analyses between lexical transfer and TEM-4 scores. Results show that the higher the proficiency level, the less the positive lexical transfer, which means that lexical positive transfer has a negative correlation with general L2 proficiency ($r(20) = -.339$). As for negative lexical transfer, a very weak positive correlation is found, with $r(20) = .09$ (see Table 4.20).

Table 4.20

Correlation matrix between the nature of lexical transfer and TEM-4 scores

	TEM-4 scores (General L2 proficiency)
LP	r = -.339, Sig. = .144
LN	r = .097, Sig. = .685

Besides looking at the relationship between transfer in tense and aspect of different nature and general L2 proficiency (TEM-4 scores), it may also be interesting to know the relationship between general L2 proficiency and the number of each type of transfer. Thus, correlation analyses were run between transfer in tense and aspect (T)/lexical transfer (L)/syntactic transfer (S) and TEM-4 scores. Results shown in Table 4.21 suggest that all types of transfer have weak negative correlation with general L2 proficiency. The strongest negative correlation is found between lexical transfer and TEM-4 scores ($r(20) = -.294$). These indicate that as proficiency goes up, the number of transfer becomes less and less, be it lexical, morphological or syntactic transfer.

Table 4.21

Correlation matrix between the number of different types of transfer and TEM-4 scores

	TEM-4 scores (General L2 proficiency)
Number of Lexical Transfer (L)	r = -.294, Sig. = .144
Number of Transfer in tense and aspect (T)	r = -.110, Sig. = .645
Number syntactic transfer (S)	r = -.247, Sig. = .295

d) The relationship between SP and STP/STN

Interestingly, results of Pearson correlation analyses show that transfer in tense and aspect actually has a very statistical correlation with transfer in syntax ($p < .05$, see Table 4.22 & Table 4.23). It means that if a learner is more aware of the similarity of

French and English sentence structure and word order, he/she tends to do better in associating French tense and aspect with English ones, and it is the opposite for the relationship between the number of positive syntactic transfer and the number of negative transfer in tense and aspect.

Table 4.22

Correlation matrix between positive syntactic transfer and positive system transfer in tense and aspect

	SP	STP
SP	1	r = .647**, Sig.= .002
STP	r = .647**, Sig.= .002	1

**. Correlation is significant at the 0.01 level.

According to Table 4.22, the number of positive syntactic transfer (all from English) is positively and very significantly correlated with the number of system positive transfer in tense and aspect (all from English), with $r(20) = .647$ and $p = .002$ (<.01).

Table 4.23

Correlation matrix between positive syntactic transfer and negative system transfer in tense and aspect

	SP	STN
SP	1	r = **-.487***, Sig.= .029
STN	r = **-.487***, Sig.= .029	1

*. Correlation is significant at the 0.05 level.

As shown in Table 4.23, the rate of system negative transfer in tense and aspect (including both item and system transfer) is negatively correlated with the positive transfer rate in syntax from English, and the correlation is statistical, with $r(20) = -.487$ and $p = .029$ (< .05). As STN is not necessarily the reverse of STP, it is found that the negative correlation is less strong than the positive one.

To summarize, the above section gave answers to the relationship between the rate of transfer in tense and aspect and other variables. Correlation analyses show that the positive transfer in tense and aspect (or system transfer in particular) has a statistical positive correlation with the scores of English test on past and perfect tenses (Task Two scores), while negative transfer in tense and aspect has a significant negative statistical correlation with the Task Two scores (more significant than the positive ones, with $p < .01$). However, the positive and negative transfer in tense and aspect have only moderate positive and negative correlation respectively with the general grammar scores. Furthermore, and unexpectedly, they have no relationship with the general L2 proficiency at all. Another very interesting finding is that transfer in syntax (word order and sentence structure) has emerged to be a variable that has a very strong correlation with the rate of transfer in tense and aspect. It has a significant positive correlation with the number of positive transfer in tense and aspect while significant negative correlation with the number of the negative transfer.

4.6 Answers to Research Question 4: Is there any significant difference in the outcome of L3 past tense comprehension between different L2 proficiency groups?

The place where general L2 proficiency does have an influence on is the overall performance of L3 comprehension. The participants were grouped into two groups according to the TEM-4 scores. Their scores range from 67 to 78 with an average of 74, and the medium (also 74) was used as the benchmark for division of groups. Ten are in high proficiency group while the other ten are in the low proficiency group. Afterwards, an independent samples t-test was run on overall performance (overall accuracy). The

results are presented in Table 4.24 and Table 4.25:

Table 4.24

Descriptive Statistics for the overall performance of two groups

	N	Mean	SD	SE
High L2 Proficiency Group	10	-27.3000	4.54117	1.43604
Low L2 Proficiency Group	10	-34.4500	8.33150	2.63465

The high proficiency group has a mean score of -27.3 compared to -34.45 for the low proficiency group. Therefore generally speaking, the high proficiency group out-performed the low one. Furthermore, an independent-samples *t*-test was conducted to evaluate the hypothesis that the high L2 proficiency group would have a significantly better overall performance in the comprehension of French sentences. This hypothesis is supported as the difference is confirmed to be significant at greater than .05, $t(14) = 2.383, p < .05$.

Table 4.25

T-test for the comparison between high and low L2 proficiency groups

Levene's Test for Equality of Variances			t-test for equality of means			
	F	Sig.	t	df	Sig. (2-tailed)	Std. Error
Accuracy (overall performance)	4.945	.039	2.383	13.914	***.032****	3.00060

* $p < .05$

Table 4.25 shows that general L2 proficiency affects overall performance in L3. The high proficiency group scored significantly higher ($M = -27.3$, $SD = 4.54$) than the low proficiency group ($M = -34.45$, $SD = 8.33$) in terms of the overall comprehension of text and sentences in French PC. In other words, the better one learns a second language, the better he or she will do in the comprehension of the L3, which is typologically similar to the second. These points of accuracy (in minus) for individuals were scored

on the basis of second round comprehension only, which is the informal translation. These comprehensive accuracy scores reflect the individuals' overall understanding of French PC, the vocabulary in French and the accuracy in production in English as well. Therefore, the errors identified for deletion of points include all cases of negative transfer (lexical and grammatical), and all cases of inappropriate usages of words, tenses or chunks and expressions. The next subsection will deal with the typical cases of errors in tense and aspect besides negative transfer.

4.6.1 Different causes for errors in tense and aspect—ProE and ProF

As mentioned in section 4.3 of this Chapter, there is a third level of coding in terms of tense and aspect besides transfer, which is the coding of error types in tense and aspect. The percentages of the three possible causes of errors in tense and aspect are shown in Figure 4.5 below. Negative transfer still takes up the largest percentage of all the causes for errors in tense and aspect. It is manifested in the wrong attempts of associating English tenses with French PC. In other words, wrong tenses are used in the second round comprehension because of these wrong perceptions. Details will be provided in the next chapter in the discussion of Research Question 2. Lack of proficiency in English (ProE) takes the following three major forms of manifestation: 1) "Someone have/has do something." For example, participant #7 in the informal translation said that "I haven't visit [*sic*] my grandma for two weeks." 2) didn't + past tense form. For example, participant #6 remarked that "but he didn't returned [*sic*]." 3) Incomplete structure. This is very typical for question/answer type of sentences. For instance, for the sentence *Non, je n'ai rien écrit* (= "No, I haven't written anything/No, I didn't write anything."), some of them gave the translation as "No, didn't yet [*sic*]," or "No, I never written [*sic*]," or even "No, I still not start to write [*sic*]."

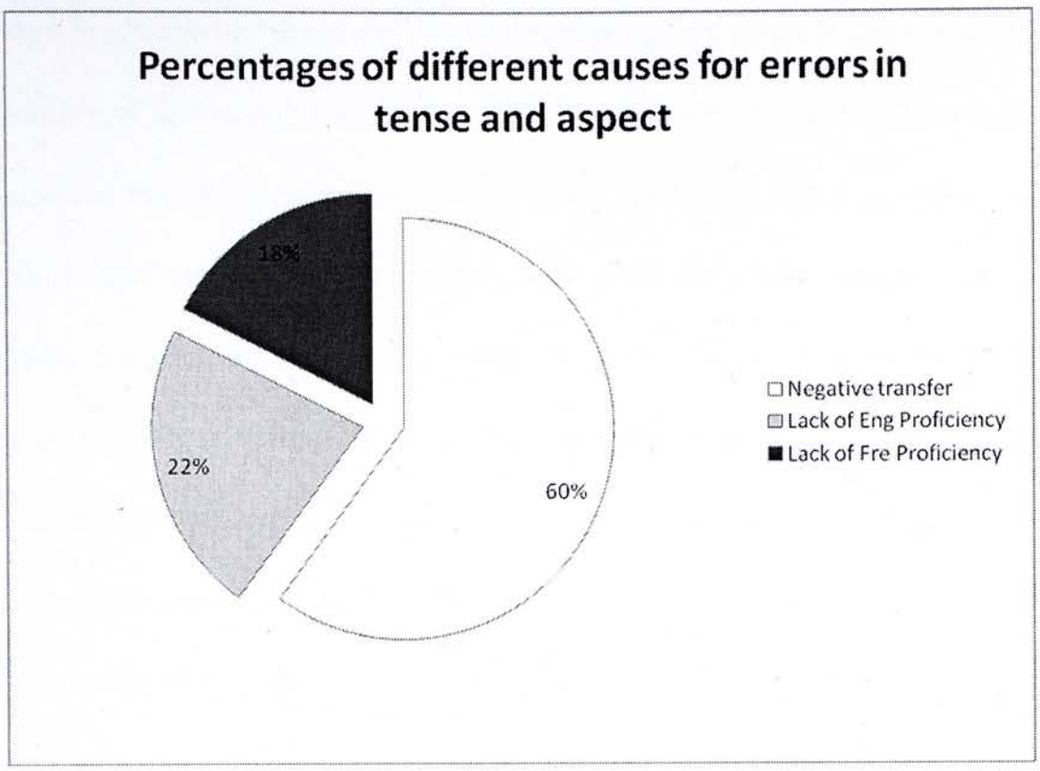


Figure 4.5. Percentages of different causes for errors in tense and aspect

As for the category of ProF (lack of proficiency in French), it refers to one situation particularly, which is the inaccurate understanding of time adverbials that leads to the wrong comprehension of PC. Descriptive statistics on several time adverbials that cause most problems for the learners are shown in the following Table 4.26.

Table 4.26

Number of errors caused by the misunderstanding of several time adverbials in French

French time adverbial	Number of errors caused
Il y a (= "ago")	13
depuis 2000 (= "since the year 2000")	7
pour trois jour (= "for three days")	5
comme chaque jour (= "as usual")	4
encore (= "yet/still")	2

For example, for sentence three—*Il y a deux semaines, j'ai visite ma grand-mère* (= "I visited my grandma two weeks ago")—a lot of them do not know that *Il y a*, when used in the past tense sentence in French, means "ago" in English. They assumed that it

should always be "there are" in whatever occasion, so their choices of tense are in a variety of forms, and they are mostly wrong. Same as in sentence one, some of them guessed that the preposition *pour* (= "for") in the time adverbial *pour trios jour* (= "for three days") means "in" in English. As a result, they later reported that even though they knew that this was a past tense sentence judging from the structure of the verbs, they trust the time adverbial more than the basic verb structure of the PC, so they finally chose to use present tense indicating future instead of perfect aspect.

In summary, in answer to Research Question 4, there is a significant difference in the overall performance of comprehension in French between the high and low L2 proficiency group, with the high L2 proficiency group significantly outperforming the low one. Furthermore, there are different causes for errors in comprehension besides negative lexical or temporal transfer, such as the lack of proficiency in English or in French, which is manifested in different forms of errors in tense and aspect in the informal translation.

4.7 General results of Research Question 2: What are the patterns of transfer in tense and aspect as regards to passé composé?

Task One was composed of two main parts, the part of "text" and the part of "sentences." Results from reports cross 20 participants show that for the part of "text," the overall accuracy is lower than the part of individual isolated sentences, which suggests that the Chinese learners are constantly ignoring tense in their understanding of texts in an Indo-European language. This further indicates that the students usually over-rely on the time adverbial in comprehending the concept of time, as in the section of "text," there is only one time adverbial showing the setting of time compared with many in the part of "sentences." This overreliance on time adverbial results in the use of

wrong tense marker or even no tense marker when the time adverbial is far away.

For the part of individual "sentences," they are categorized into four different types of passé composé according to their different English equivalents. They are:

Table 4.27

Types of passé composé categorized according to their English equivalents

Type One PC	aux. *avoir* (= "have/has") + past participle = perfect aspect present tense
Type Two PC	aux. *être* (= copula verb) + past participle = no aspect past tense
Type Three PC	aux. *être* (= copula verb) + past participle = perfect aspect present tense
Type Four PC	aux. *avoir* (= "have/has") + past participle = no aspect past tense

According to the Prator's (1967) Hierarchy of Difficulty hypothesis in acquisition, if it can be applied to the L2 to L3 situation, the first type is then hypothesized to be the easiest to be acquired. It is the closest to "have/has done" in English, literally and grammatically, which corresponds to the zero level in the Hierarchy of Difficulty. Type Two and Type Three corresponds to the level 4 in the hierarchy—"overdifferentiation" —learning a new item in the target language that bears no similarity to the native language. In English we do not need a copula verb functioning as an auxiliary verb before the main verb for simple past tense, but Type Two PC needs one; and for present perfect, even though an auxiliary verb is needed, a copula verb never functions as an auxiliary, but in Type Three PC it does. Therefore for Type Two, students may equate the whole structure (*être* + p.p.) with a main verb of past tense form in English. As regards the negation, it is easy to map *être* with "didn't"/"haven't" in English. For Type Three, participants may reinterpret the auxiliary verb "have" in present perfect tense in English and associate it with *être* as an auxiliary verb in French PC; Type Four in combination with Type One PC corresponds to the 5th level "split"—one item in the native language becomes two or more in the target language requiring the learner to

make a new distinction—therefore, it should be the most difficult to acquire. Type four PC with auxiliary *avoir* (= "have/has") is similar to the English present perfect tense in form, but different in the actual grammatical function and meaning.

In the real task, the above hypothesis is supported (see Table 4.28). Type one and two have the highest accuracy rate. They are very close to each other, being 75% and 72.5% respectively, while the third type has a lower accuracy than the second type, with a mild drop to 65%. However, it seems that the time adverbial is more important to the students than the assumed difficulty based on the structure. Whenever the time adverbial is evident and obvious, they were able to get the tense right, regardless of what form or structure it is presented in. For example, in Type Three, some time adverbials are not as obvious or easy for meaning recall as those in sentences of Type One and Two; for instance, the most difficult time adverbial was embedded in Type Three PC—*pour trois jour* (= "for three days").

Table 4.28

Types of PC and rate of accuracy in association between French and English

Type	Accuracy raw number	Accuracy *rate*
Type One: *avoir* + p.p.= perfect aspect present tense	75/100	75%
Type Two: *être* + p.p.= no aspect past tense	58/80	72.5%
Type Three: *être* + p.p.= perfect aspect present tense	39/60	65 %
Type Four: *avoir* + p.p.= no aspect past tense	12/60	20%

As predicted, the Type Four PC has a far lower accuracy (20%) than all the other three types of PC. Unfortunately, this type has the highest frequency than the other three types to appear in the French language. This calls for the need to explain the PC in terms of contrastive analysis between French and English, drawing the students'

attention to this special difficult feature in order to avoid negative transfer derived from the simple speculation from the form.

Looking at the choice of tenses across 20 participants in general, the qualitative results of how the students understand French PC using their knowledge of English demonstrate that they are not well aware of what tenses passé composé is equivalent to systematically in English. As can be seen in Figure 4.6, for most sentences (18 out of 24), the translations involve more than the only two possible correct tenses—simple past or present perfect. It shows that there is not only the problem of students' not being able to distinguish between when present perfect tense should be used and when simple past tense should be used for PC, but a fundamental problem is that they are not informed of the crosslinguistic similarities and differences between French PC and English tenses, i.e., what tenses PC *can be* equivalent to in English metalinguistically. For some sentences, they even came up with seven to nine possibilities. Please be noted that in this section, all the calculations on accuracy of association include all types of transfer in tense and aspect and also ProF (wrong association because of lack of proficiency in French time adverbial), *but no ProE is involved.* In other words, "1" in the "frequency" column means that one participant intends to associate this tense with French PC. If the association is right, it may be due to positive transfer; if it is wrong, it may result from negative transfer or ProF. It is not taken into consideration if the participant is not 100% correct in the form of production because of ProE.

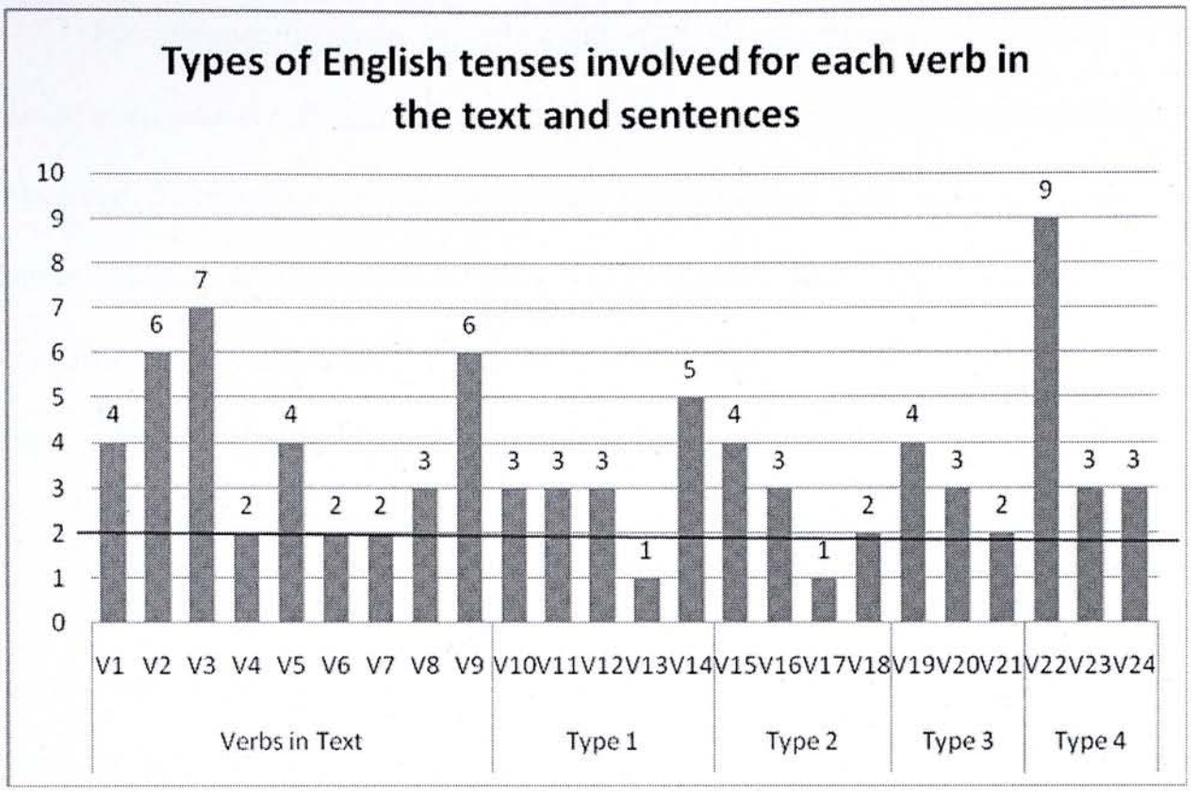


Figure 4.6. Types of English tenses involved for each verb in the text and sentences

As can be seen clearly in the above figure, four verbs stand out by having more than 5 possible English equivalents given by the 20 participants—Verbs 2, 3, 9 and 22. These will be explained in detail one after another in the following section. First of all, among these four verbs, Verb 22 (which belongs to the Type Four French PC sentences) has the most English equivalents (in total 9) according to the participants' assumptions as shown in Table 4.29.

Table 4.29

Tenses in the English Translations by 20 participants for Verb 22

V22: Il y a deux semaines, j'ai visité ma grand-mère.	
Standard translation: I visited my grandma two weeks ago.—no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. I visited…two weeks ago/before.	4
2. There are two weeks, I have visited…	4
3. It is/has been two weeks since I visited…	3
4. There are two weeks, I visited…	3
5. I have visited for…	2
6. I have been visiting for…	1
7. There are two weeks, I will…	1
8. I have visited…ago.	1
9. There are two weeks, I go to visit…	1

For this specific sentence, only 4 out of the 20 participants made correct association between French PC and English tenses. First of all, a common problem is observed. As mentioned in the participants' follow-up interview, *il y a* as a time adverbial has been mistaken for "there are" in English. This is typical throughout the understanding of other sentences as well, which is thus coded as a specific cause of error in tense and aspect "ProF".

Even though this sentence is special in that it involves a special grammatical feature in French, a strong negative item transfer from English is identified. Four participants (#2, #4, #7, and #18) produced an ungrammatical sentence by word-for-word literally translating from English to French: "There are two weeks, I have visited my grandma." In this example, there are two verbs in the same sentence without a conjunction and the first verb and second verb have totally divergent tense markings. Another three (#5, #14, #12) participants did better. When they see *ai* (= "have"), they did not immediately associate it with its similar form "have" in English, but gave a second thought for no aspect past tense ("There are two weeks, I visited…"), even though the translation is still ungrammatical in English. However, it is understandable for them to map *il y a* with "there are" in English, as it was written clearly in their textbook and they were not explicitly taught of the other usage of *il y a* in PC meaning "ago." Two other participants (#6, #20) who also started the sentence with "there are," strangely associated the main verb with future tense and present tense in English respectively. P#6 said that it was because when she saw "there are two weeks," she felt that it means "there is going to be a two-week holiday in the future," so she "will visit" her grandma. Nevertheless, four of them (#3, #9, #16, #19), with their logical reasoning, figured out the right form by themselves.

Verb 3 in the part of "text" has the second most English equivalent tenses shown

in the participants' reports. They produced 6 types of tenses in the translation for this verb in PC.

Table 4.30

Tenses in the English Translations by 20 participants for Verb 3

V3 : Puis leurs enfants ont regardé la television. Standard translation: Then their children watched (the) TV. —no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. no aspect past	7
2. progressive past	5
3. progressive present	4
4. perfect progressive present	1
5. perfect present	1
6. present (indicating future)	1
7. no aspect present	1

Seven out of 20 participants made the right association of French PC with no aspect past tense in English for this verb. It can be seen very clearly that progressive aspect, with a total frequency of 9, is the aspect participants prefer to associate with French PC for the verb "watch." Participant #13 mentioned in the follow-up interview that the "verb 'watch' gave them a feeling for activity that lasts for a while." A number of participants realized this mistake themselves and corrected it in the follow-up interview (#3, #11, #12, #18, #19, #20). Apart from this, the incorrect recall of the meaning for the conjunction *puis* also gave rise to the mis-association between French PC and English tenses. Participant #6 and #8 mistook it for the preposition "during," which indicates an action that is happening for some period of time. This is another evidence for the influence of ProF on the understanding of French vs. English tenses. Participant #20 and #18 mistook *ont* (= "have") for *sont* (= "are"), which gave them more reason to associate this PC verb with the English progressive "are/were doing." Still some of them (#12 and #15) are superficially making equivalence between *ont*

(conjugation of *avoir* = "have") and the English "have," which means the perfect aspect.

Both Verb 2 and Verb 9 have six types of equivalent English tenses in students' translations. Verb 2 is in a sentence of the part of "text" as follows:

Table 4.31

Tenses in the English Translations by 20 participants for Verb 2

V2 : Il a bavardé avec sa femme comme chaque jour. Standard translation: he talked to/chatted with his wife as usual. --no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. no aspect past	9
2. no aspect present	6
3. progressive perfect present	2
4. perfect aspect past	1
5. perfect aspect present	1
6. present (indicating future)	1

Nine out of 20 participants made the right association of French PC with no aspect past tense in English for Verb 2. There are six cases of no past tense marking, where they used no aspect present tense. The reason why the researcher believes the use of present tense means "no past-tense marking" and it was coded as "system negative transfer from Chinese" is because of the participants' own remarks in the follow-up interview. They said that they constantly forgot about tense if their attention was not intentionally drawn to it. They even "blame" the researcher for not reminding them of tense in the first place. And they believe this ignorance on tense was due to the influence from a tenseless native language: Chinese. For those who chose progressive aspect, they noted in the interview that this verb sounds more like they are "doing" it (the action is still in process) than they "did" it that day (the action is completed). In addition, the time adverbial in this sentence also causes problems in understanding. The time adverbial *comme chaque jour* means "as usual" in English, but literally, its form looks like "as everyday." If the learner is not familiar with the word *comme* (= "as"), he

or she may easily have the wrong guessing of the whole adverbial meaning simply "everyday." As participant #12 remarked in the interview, whenever they see a time adverbial like "everyday" or words close to "usually," their immediate reaction is that they should use present tense only as this is an action done very often by the speaker. In the mean time, they might be having doubts on why a past tense form in French can have a present equivalence in English. For the participants who associate perfect aspect present tense with this sentence of French PC, as noted by participant #9, is because of "the first impression" on the verb *avoir* (here *a* is the third person singular form of *avoir*, meaning "have" in English). In any case, it is hard for the learners not to make the one-to-one equivalence between word *a* and "have" and in turn think of the present perfect tense in English.

Table 4.32

Tenses in the English Translations by 20 participants for Verb 9

V9 : Sa femme a attendu toute la nuit.
Standard translation: His wife waited all night/for a whole night. –no aspect past tense

Tenses in translations from 20 participants	Frequency
1. no aspect past	8
2. no aspect present	5
3. perfect progressive present	3
4. perfect present	2
5. perfect progressive past	1
6. progressive past	1

For Verb 9 in the above sentence (see Table 4.32), the associations of French PC with different tenses in English are evenly distributed. Even though no aspect past tense, the correct one, has the highest frequency of choice, the accuracy for this verb is still lower than 50%. The frequency of using present tense is also quite high, 5 cases. They explained in the follow-up interview that the time adverbial *hier soir* (= "last night") is

too far away, therefore they have almost forgotten about the time setting for the event. As for progressive aspect, there are in total 5 cases as well, and 4 of them are perfect progressive. As indicated in the reports (#8, #11, #12, and #15), they thought that the time adverbial *toute la nuit* (= "all night") shows continuity, for which reason they decided to use perfect progressive present tense without hesitation. Those who used perfect progressive present tense further remarked in the interview that "this type of time adverbial is typical for perfect progressive tense, showing that an action was initiated in the past and continues to happen till now." But when the researcher reminded them of the "yesterday" situated at the very beginning of the text, some tacitly admitted their mistake. Still some decided to change to perfect progressive past tense. As for the association with present perfect tense (2 cases), again, it is the result of item transfer—one-to-one equivalence between the word *a* (conjugation of *avoir*) and English "have." Even more complicated, for the one (#8) who uses perfect progressive past tense, she was aware that PC is a tense related to events happened in the past. Therefore, when she was about to use perfect progressive present as the aforementioned 4 participants, she changed the tense to past. This demonstrates her lack of understanding in perfect progressive past tense in English. Her process of thinking is much more complicated than previously expected which involved four steps.

Furthermore, besides having more types of English equivalent tenses involved for each verb, the number of students' making correct association between French PC and English tenses for each verb should also be taken into account. As can be seen in the following figure, the above mentioned verbs (V2, V3, V9 & V22) with many English equivalents all have an accuracy rate of less than 50%. Apart from these four, however, V19, V5, V23 and V24 exhibit the similar or even lower accuracy than the above four, even though they may not have more English tenses involved.

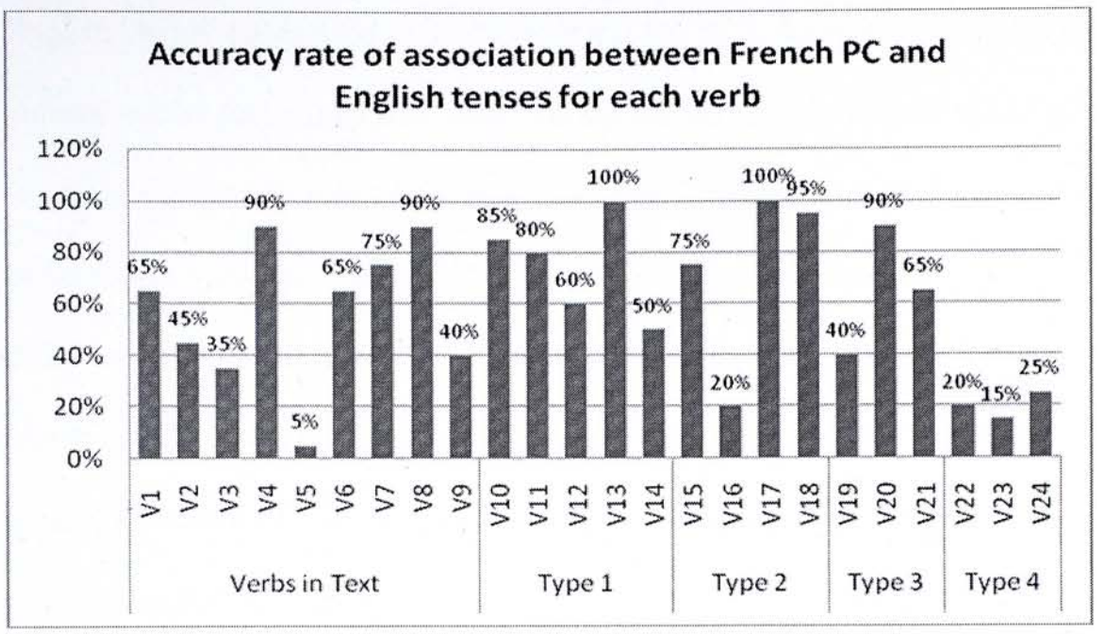


Figure 4.7. Rate of accurate association between French PC and English tenses for each verb

In the following section, the researcher will choose V23 and V24 (both belonging to Type Four French PC sentences) as the representatives of verbs that have low accuracy rate and will look at the reports from participants on these two verbs respectively.

Table 4.33

Tenses in the English Translations by 20 participants for Verb 23

V23 : Vous avez réparé le télécopieur ce matin? Standard translation is: Did you repair the fax machine this morning? –no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. perfect present	16
2. no aspect past	3
3. no aspect present	1

Only 3 out of 20 participants made the correct association for Verb 23. The others chose to use perfect present tense except one who forgot to mark tense. Two reasons can be summarized from the follow-up interview for the dominance of association between English perfect present tense with this verb in the sentence of French PC. The first reason is because of item transfer, the one-to-one equivalence of the word *avez* and

English "have" (addressed by participant #1, #5, etc.). As aforementioned, and also pointed out by participant #14, when seeing the verb *avoir*, they need to "try very hard to inhibit the tendency of associating it with the English equivalent word 'have' (the isolated words are equivalent but as a grammatical morphological word, they mean different things)". They are aware that it is dangerous to make an equivalence of the two words, and they need to "control themselves from doing that." However, this inhibition control sometimes fails as in this sentence. Participant #19 further described this process of thinking as: she started out from "have you repaired…" in a flow. When she reached the time adverbial "this morning" at the end of the sentence, she actually stopped for a while and pondered whether it should be "have" or "did." But she was too occupied by this idea of *avoir* being equivalent to "have" and it made her eventually stick to the original translation "have you repaired…"In the mean time, another part of her was "too lazy to correct it and think further, as it sounds good to her by saying 'have you repaired the fax machine?'" The other reason is because of the interrogative form of this sentence. Participant #4 said that after so many years of learning English, "the question form of 'have you done …?' has been deeply engrained in her mind as a chunk." It has already been automatized which therefore comes naturally without thinking about it when they saw a similar structure. In addition, if they "think back on the Chinese meaning, it is also acceptable to say 'have you repaired the fax machine this morning' (*Ni3-Jin1tian1-zao3shang4-xiu1-hao3-le-chuan2zhen1ji1-ma1)*." As for how they see their translation as right or wrong, only 7 out of 17 wanted to make a correction. They believe this is acceptable in English. The time adverbial "this morning" is not a sign obvious enough for them to adopt simple past tense as it is close to "today," for which they would certainly use present perfect tense. Moreover, using present perfect tense has another purpose of "emphasizing the eagerness of knowing whether the person has

finished the action or not" and it "did have an influence on the present, which conforms to the rules for using present perfect."

Table 4.34

Tenses in the English Translations by 20 participants for Verb 24

V 24 : On a installé Microsoft Office la semaine dernière. Standard translation: We installed Microsoft Office last week. –no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. perfect present	14
2. no aspect past	5
3. no aspect present	1

As for Verb 24 (see Table 4.34), curiously, it has a little higher accuracy of association than Verb 23. Two participants managed to do it right for V24 but not for V23. When they were asked about the reason in the follow-up interview, they told the researcher that "'last week' is more obvious as a time in the past than 'this morning'," which triggered them denying the intuition of using present perfect tense and changed to no aspect past tense.

In summary, for the above two verbs (V23, V24) of Type Four, the fundamental cause for the wrong association is the semantic equivalence of the French and English word with a different grammatical morphological function. The other reasons they came up with in the interview were just explanations for the sake of explanation, for convincing themselves by using present perfect tense, even though at the back of their thoughts they had a "voice" telling them using present perfect tense may not be right in English.

Presented above is the big picture of transfer in tense and aspect across 20 participants. Looking at the individuals, they have actually completed the task quite satisfactorily, as can be seen from the following Figure 4.8. All of them managed to have more positive transfer than negative in tense and aspect. This shows their ability as

a professional in learning language as they are English majors. They are able to make right associations with French and English tenses for most sentences based on their understanding in English tenses.

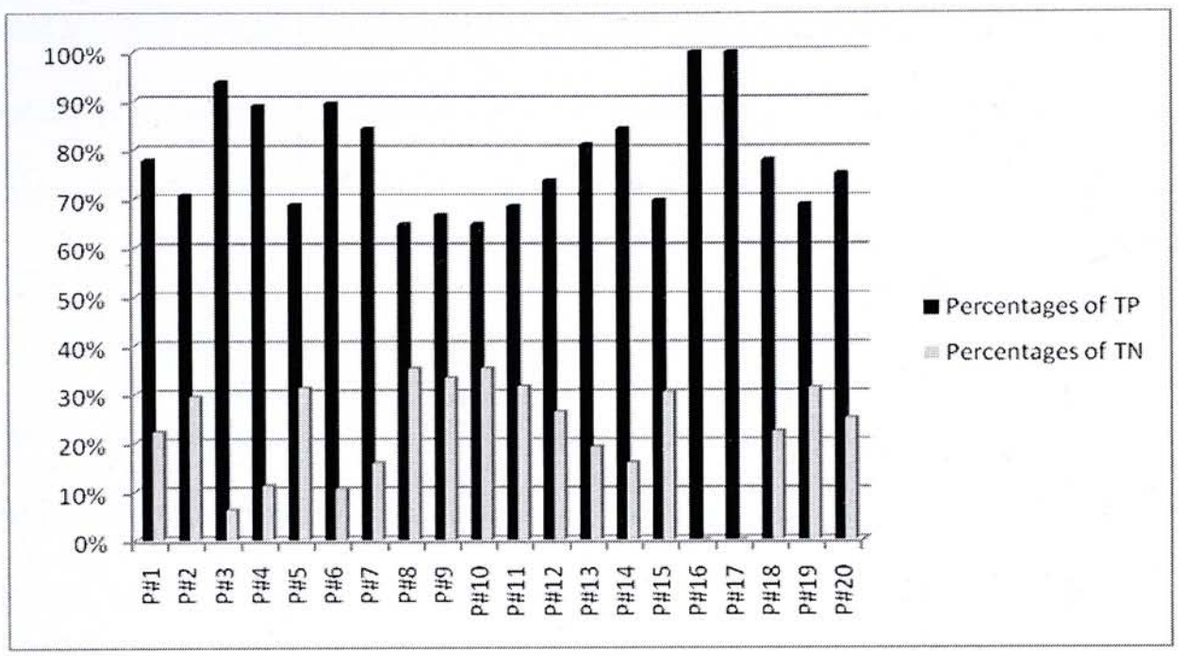


Figure 4.8. Percentages of positive and negative transfer in tense and aspect for each individual

4.8 Conclusion

So far, four major conclusions can be drawn from the current study:

First, the dominant source of transfer in the comprehension of French Passé composé is English, taking up 95% of all transfer cases. All the cases of lexical transfer are from English, and the same for syntactic transfer and item transfer in tense and aspect. The only type of transfer that involves the source from Chinese is the system negative transfer in tense and aspect, the number of cases exceeding that from English. It is because the Chinese language does not have any tense marker, which results in the learners' constant neglect of marking tense.

Second, looking at transfer in tense and aspect particularly, Pearson correlation analyses show that the higher the positive transfer rate in tense and aspect in the comprehension of French PC, the better the learner can distinguish between the English past and perfect tenses, and vice versa. If there is more negative transfer in tense and

aspect from English to French, the learner may not understand the English past and perfect tenses well. Whether a learner will have more positive or negative transfer in the comprehension of PC may be also related to the general grammar proficiency, but this is not as significant as their relationship with the Task Two scores, and it has nothing to do with his or her general L2 proficiency. Very interestingly, if a learner attends to the similarities in syntax between English and French, he or she tends to have more positive transfer in tense and aspect.

Thirdly, the group with high general L2 proficiency significantly outperformed the group with low general L2 proficiency. They are more accurate in an all-around way, such as in retrieving the right meaning for the French words, in choosing the right tense to use, and in the appropriateness of expressions in English. Causes for errors in tense and aspect are also analyzed, with three possibilities for errors identified, namely negative transfer, lack of proficiency in English and lack of proficiency in French.

Fourthly, as regards to the pattern of transfer in tense and aspect—how the students associate French PC with English tenses if they are not taught about it. Qualitative results show that generally for most sentences, surprisingly, students are actually not wavering between the only two possible English tense equivalents for French PC; but rather, they came up with other English tenses they perceived as equivalent. Nevertheless, when each individual is concerned, they are able to make right association with French and English tenses for most sentences based on their understanding in English tenses. But the lowest accuracy of association is observed for the type of PC most frequently appears in French, which calls for a direct instruction on the contrastive analysis between English and French past tenses.

5 CHAPTER FIVE

DISCUSSION

5.1 Introduction

After presenting the statistical results and some general facts from the think-aloud protocols as well as the interviews in the previous chapter, the current chapter will discuss the implications behind these results. This chapter is organized by research questions. In-depth discussion will be provided for each research question in reference to the findings as well as the literature reviewed previously.

One thing to be noted is that, as in Chapter Four, the discussion of Research Question 2 will be presented at last as it is qualitative in nature, which is different from the other three questions. It will involve a detailed discussion with a longer coverage, and will be organized thematically.

5.2 Research questions readdressed

There are altogether four research questions in the current study. They are as follows:

1. Generally speaking, for L1 Chinese-L2 English-L3 French learners, what is the major source of transfer in the comprehension of French passé composé? Will L2 proficiency influence the source of transfer?
2. What are the patterns of transfer in tense and aspect as regards to passé composé? Is the transfer positive or negative?
3. Why are there such patterns of transfer in tense and aspect? Are they related to general L2 proficiency or the different understandings of English past and perfect tenses?
4. Is there any significant difference in the *outcome* of L3 past tense comprehension between different L2 proficiency groups? Will the high L2 proficiency group

significantly outperform the low one?

In the following section, discussion about each research question will be provided separately with reference to the relevant literature and the empirical data collected in the current study.

5.3 Discussion of Research Question 1

The results in the previous chapter show that in general, the dominant source of transfer is from English. This is confirmed in the current study. As reviewed in Chapter Two, language typology has been identified as the most important factor for determining the source of transfer. The present study belongs to the first context concerning the issue of typology: when learners have knowledge of related and unrelated language in learning the third language. Previous research, such as Fouser (2001), Di (2005) and Uljin *et al.* (1981) all show that the language with linguistic proximity causes more influence than the unrelated language. Even for languages that belong to the same language family, this still holds (e.g. Singleton & O'Laoire, 2004, 2005).

As has been mentioned in the results, the reason for transfer from English taking the dominance is because of the large number of cases of lexical transfer that comes from English. This echoes with findings in the previous research concerning typology in L3 acquisition, which focuses primarily on lexical transfer, and in L3 production. Cenoz (2001, 2003) found different transfer sources for different functions, where typology seemed to be crucial for lexical transfer. Ringbom (2001) further contended that form transfer is typology-based while semantic transfer is L1-based. Ringbom's (2001) assumption is particularly true in this study even though the latter half needs to be revised to "semantic mapping is L1-based" as no semantic transfer has been found

because of the fact that this study is not dealing with L3 production where semantic transfer may be more prominent and easier to find.

It was found that almost all the cases of lexical transfer are transfer of form from English, and it is further confirmed in the reports by the students that English and French are similar in the sense that they are both alphabetical languages, and they "look" similar. However, as mentioned earlier, regarding lexical representation in the multilingual mind, French-Chinese mapping rather than French-English is predominant, and is usually found at the lemma level, or semantic mapping. In this study, mapping of words between languages is not considered as transfer, because the mapping does not reveal that the students are "making use of the previous linguistic knowledge" (stated in the definition of transfer in the current study) to help them learn a new language. It is therefore not consistent with the definition of transfer in this study. This natural mapping between French-Chinese is mainly caused by the instruction and the textbook—the first time the learner saw a French word, it appeared at the same time with a Chinese word. In addition, some participants (e.g. #1) mentioned that it is because "their teacher does not allow them to relate French words with English words as he believes that English would interfere with their learning of French." And most importantly, "the teacher himself is bad at English" (participant #4). Nevertheless, all the learners cannot help associating some words with English, hence all the English words they mentioned in the think-aloud protocol are words they assume are similar to French, mostly cognates.

Still, there are participants who never semantically map a French word with Chinese. These participants described their thinking process as follows: they would like to search for an English lexeme which maps onto the French word whenever they learned a new word, even though no English forms were provided in the textbook but

only Chinese meanings. Sometimes they succeeded in searching for the English word, sometimes they failed. In this case, they had to memorize the words based on the Chinese meaning, or else they would use the English word to map the French one. To summarize, the common situation is that a learner would prefer to associate a French word with an English one whenever there are cognates; otherwise they would treat it as a whole new word in a foreign language when they meet words that is not formally or semantically close to an English word.

The behavior of transfer is also more or less influenced by the learning style of the students. Some say that at the very beginning of learning French, they would force themselves to avoid thinking about English. They are afraid that it may interfere with their learning of French as there are many "false cognates." As this inhibition goes on, they became used to treating French as a completely new language that has nothing to do with English, just as when they first learned English. Therefore, for this group of a few people (e.g. participant #4, #15), very few cases of lexical transfer from English are found. In contrast, if a learner is used to making contrastive analysis between languages when he/she first learns a foreign language that is typologically close to a previous one, it may become a habit for the learner to look for an English word whenever he/she meets a new French word. And thus more lexical transfer can be found, such as for participants #13, #17, #19, and #20.

In short, it can be concluded in the study that lexical transfer, especially transfer of form, is typology-based. Lexical representation, or semantic mapping, is a separate matter, as it can be influenced by the learning style and habit of the student, the L2 lexical proficiency or even the instruction. Psychotypology—the perceived language distance—may also be at play here.

As for transfer in tense and aspect, results show that in total there is more transfer

from English, and this transfer is mostly positive. However, for system transfer in tense and aspect, even more negative transfer is found from Chinese than from English, and all the transfer from Chinese is negative. According to the researcher's knowledge, there is hardly any study that has particularly addressed the issue of transfer in tense and aspect in the acquisition of a third language that is typologically similar to a second language, but distant to the native language. The result in this study can be added to the existent literature: for learning a third language that is more marked in tense than the native language, a learner transfers from both the native and the non-native languages, but is likely to transfer negatively more from the native language tense system than from the second language system which is similar to the third language. This may conflict with the results from the generative perspective (Leung, 2005) that in the initial stage of L3 acquisition, transfer in TLA does not necessarily come from L1, while there is partial transfer from L2. This study shows that a learner of a third language still has to go through the stage of transferring the tense marking in the native language to the third language; it is just that the process towards nativeness may be quicker with the help from the knowledge of a previous foreign language that has a tense marking system. The effect of being a bilingual with one [+tense] language to learn a third [+tense] language is similar to what Yang and Huang (2004) described in their research: it took much less time for subjects with both the L1and the L2 having [+tense] than L1 Chinese L2 English subjects to make progress in tense-aspect development. This result can be extended to the current research as an explanation. Maybe the stage of reliance on pragmatic and lexical devices would pass quickly as well for the subjects in the present study. However, this is only an observation which awaits further empirical research.

5.4 Discussion of Research Question 3

5.4.1 General descriptive analysis

The general descriptive analysis on transfer in tense and aspect provided the following results: first of all, there are fewer cases of item transfer in tense and aspect than system transfer. Secondly, more transfer in tense and aspect is from English than it is from Chinese. Thirdly, there are more cases of positive transfer in tense and aspect than negative. All these show that the Chinese learners of French with an English major seldom make superficial connections but rather system associations between French and English tenses; and that English is a language that is typologically similar to French and thus induces more transfer (and more positive transfer in this study). Finally, it also indicates that the students' previous knowledge of a foreign language (English) is advanced enough for them to make some correct self-initiated (they are not taught about this) associations between French and English.

5.4.2 Discussion of the relationship between transfer in tense and aspect and other variables related to L2 proficiency

Results in the previous chapter have demonstrated the relationship between transfer in tense and aspect with the three variables: the knowledge of English past and perfect tenses, the general English grammar proficiency and the general L2 English proficiency. To summarize, positive transfer in tense and aspect has a significant positive correlation with the scores of English past and perfect tenses, a moderate positive correlation with the general English grammar proficiency and no relationship with the general L2 English proficiency. Negative transfer has the same trend of correlation with different variables, but in negative correlations, and with a stronger

significance.

The reason why positive transfer in tense and aspect is significantly positively correlated with Task Two scores is self-evident. French PC has only two possible English equivalents: simple past and present perfect. When should a present perfect tense be used and when should a simple past be used is directly related to how these tenses are used in English. Therefore, if a learner can distinguish these two tenses in English, he/she may be able to produce correct English translations, or the opposite. Furthermore, as Table 4.17 shows, system negative transfer is more negatively correlated with Task Two scores than the total number of negative transfer in tense and aspect with Task Two scores. System transfer, opposed to item transfer (simplified one-to-one relation between an L1 item and L2 item), means the transfer of abstract principles of organizing information in L1, which "assumes cross-linguistic functional equivalence while formal item similarity is normally not involved" (Ringbom, 2007, p. 55). It means that if a learner is not able to make systematic connections (rather than formal item mappings) between PC and English past and perfect tense, he would be more likely to have more negative associations between English and French tenses in the understanding of French PC.

The following case studies will provide insights into why the nature of transfer in tense and aspect is significantly correlated with Task Two scores. Two typical learners have been chosen; one of them (participant #17) scored the highest in Task Two, and got the lowest negative transfer rate and highest positive transfer rate in tense and aspect. The other one is participant #20, who scored the lowest in Task Two and got the highest negative transfer rate in tense and aspect.

Participant #17 said in the interview that she "likes English grammar," and she is particularly interested in comparing French with English while learning French. She

perceived that the two languages are similar. Her learning style is very analytic in nature as she likes thinking and finding out rules or higher principles to guide her learning. She is able to spot the similarities and differences in the two language systems rather than equating the superficial similar forms between them. She termed this way of learning as "compare and contrast method," meaning that making positive associations while bearing in mind the differences. She is very successful at making use of English knowledge while avoiding the interference. She concluded that in making the tense right, she used a lot of tactics comprehensively, such as the contextual clues, the chronological order, lexical expressions, and more importantly, the time adverbial (especially the preposition involved) as tense reminder.

In contrast, for participant #20, it was after the two rounds of comprehension that she finally realized that Task One was about PC (after the researcher's reminder in the follow-up interview). When the researcher asked which tense in English she thought was equivalent to PC, she could not find any. And her English tense use is unsystematic. In the part of "text," the first sentence showed the past time setting "last night," and she used a simple past tense. Since then, she began imagining the context for the rest of sentences. For example, she used a past progressive for "he and his children were watching TV." And for most of the sentences, she did not mark any tense, or used present tense. The verb stands there alone, with no morphological inflections. And when she was asked why she did not mark any tense, she was surprised and said that she was just interpreting "the meaning"; she even "blamed" the interviewer for not reminding her of tense. This is a very typical Chinese way of tense development as documented in Yang and Huang (2004): the early stage of tense acquisition is dependent on lexical and pragmatic devices. This incomplete system of tense development, or this non-acquisition (Ayoun, 2005) of English past and perfect tense morphology, has been

carried over to the understanding of French tense, manifested as not being able to tell the accurate form for the PC.

In conclusion, from the cognitive perspective, whether the learner can understand PC correctly or not is directly related with his/her understanding of the distinction between the English present perfect and simple past tense as these two tenses are the only two English equivalents for PC. Therefore it is reasonable and predictable that the scores in Task two have a very significant positive correlation with the positive transfer in tense and aspect, and negative with the negative transfer in tense and aspect. A clear evidence for interlanguage transfer can be identified here: the participants are transferring the interlanguage tense system to another interlanguage. In short, the Chinese students need to understand the English tenses well in order to know the new French tense well. Treating French PC as a new tense in a new language while avoiding the contact with English may not directly solve the problem. As an example for support, one of the participants said in the interview that she became clearer about the distinction between English past and perfect tenses by doing this French exercise after a discussion with the researcher. In other words, the understanding of French tense may also go backward to influence the previous understanding of the tense in the previous interlanguage which the learner did not grasp very well, to even help them or force them reinforce the concept of tense in the two interlanguages.

For the second variable, general English grammar proficiency, transfer in tense and aspect is moderately correlated with it. This can be expected, since general English grammar proficiency is also related to the understanding of tenses, but not as directly as the relationship between Task Two and PC. Therefore the correlation between transfer in tense and aspect and general English grammar is not as strong as it is with Task Two scores. An interesting guess for the future studies may be that the transfer rate in the

acquisition of grammatical features in the L3 French is significantly correlated with the understanding of English grammar.

Very surprisingly, no relationship was found between L2 general proficiency with the nature or source of transfer in tense and aspect. A possible reason may be that transfer in tense and aspect is more grammatical in nature, and general L2 proficiency is not directly linked with this type of ability. In addition, a student with high English grammar proficiency may not be doing well in tense and aspect in English, or more specifically, the distinction between English present perfect and simple past as these may not be tested in the general proficiency test. And as mentioned earlier, the behavior of transfer is a complicated issue in which other factors such as learning style and instruction may also be at play. Nevertheless, an important finding in Tremblay's (2006) study has been confirmed in this study, which is that the "non-native influence has a tendency to decrease as L2 proficiency increases," even though not significantly. It can be seen that the number of lexical transfer is negatively correlated with general L2 proficiency scores in Table 4.21. Finally, it has to be pointed out that the reason why in Tremblay's (2006) research (L1 English L2 French L3 German learners) transfer from L2 is marginal is because "the threshold level of L2 proficiency has not been reached for it to have an influence" (p. 116). But in this research, transfer from L1 is marginal, no matter how non-proficient L2 is. This suggests that the effect of typology overrides L2 proficiency. And as also noted in Tremblay's (2006) research, the other possible reason for L2 transfer being marginal is typological proximity as English is closer to German than French is.

In the literature of crosslinguistic influence in third language acquisition (e.g. De Angelis & Selinker, 2001; Dewaele, 1998, 2001; Fuller, 1999; Hammarberg, 2001; Jarvis, 2000; Kellerman, 1983; Odlin, 1989; Poulisse & Bongaerts, 1994; Ringbom,

1986, 2001; Williams & Hammarberg, 1998), linguistic and non-linguistic factors have been identified to affect transfer from non-native languages, L2 proficiency being one of the most important non-linguistic factors. However, "we have very limited understanding of how it affects CLI as there is virtually no experimental studies that analyze L2 proficiency as the central variable" (De Angelis, 2009, p. 34). Previous research (e.g. Akukanna *et al.*, 1981; Clyne, 1997; Ringbom, 1987; Schmidt & Frota, 1986) focused on the discussion of the issue of threshold levels—how proficient a learner should be in the language before it begins to affect their production or development of the target language to a significant extent. And De Angelis (2009) remarked that this threshold seems to be low as there are studies with evidence saying that transfer can occur from the language the learner does not know well and also evenly from the non-native language the learner knows well. According to the evaluation of the current researcher, one should look at all these results with reserve as a lot of factors may be interacting with each other and the conclusion can never be too simple. For example, typology should be seriously taken into consideration. If L1 and L2 are both close to L3, same as in Tremblay's (2006) study, transfer can happen from any language, but there may be more cases from L1 as it is more proficient, especially if the L2 has a very low proficiency. However, if L1 is less close to L3 than L2, even though L2 may be really non-proficient, it can still have an influence. Therefore, the "threshold level" actually depends on how close the L1and L2 is to L3 respectively. Furthermore, the previous studies have not looked at three languages with an L1 very distant from the L3. In the current study, the feature in L3 is absent in L1 but present in L2, it can thus be hypothesized that the transfer will certainly come from L2. Then the big issue brought to discussion is that negative transfer from L1 has to be seriously taken into account, and also the individual variation of the *amount* of transfer from L2

and negative transfer from L1 because of participants' varied L2 proficiencies. The previous studies only touched upon the superficial aspect of this probe, which is the source of transfer: how proficient an L2 needs to be in order to have an influence on L3. However, after all, hardly any study has by far investigated the issue of whether L2 proficiency does have an influence on the *number* of cases of transfer from L2. And no study has ever looked at whether proficiency in L2 will result in or have a relationship with the *nature* of transfer from L2 (for example, higher L2 proficiency means higher positive transfer rate from L2 in TLA). But this becomes more fundamental under the context that the source of positive transfer can only be from one language. Because of the limitations of the current study, the subjects are merely chosen from the same intact class with similar general L2 proficiency (as they are English majors who has been learning English for more than 10 years, strictly speaking, they can be identified as upper intermediate to advanced level learners) even though their English proficiencies are varied by TEM-4 scores.

Finally, a unique finding in the present thesis is the significant correlation found between the number of cases of syntactic transfer from English and transfer in tense and aspect morphology. More specifically, if there is more positive syntactic transfer from L2 English in the comprehension of French PC, there is more positive transfer in tense and aspect morphology, and the correlation is negative between the negative transfer in tense and aspect morphology with the positive syntactic transfer. To the researcher's knowledge, no previous literature has addressed this issue. This is only presented in the present study possibly because of the way syntactic transfer is defined. A syntactic transfer in this study is identified whenever the learner reports that he/she is comparing the two languages in terms of sentence structure, or making use of the similarity of syntactic structure of the previous language in helping them understand the new target

language. Therefore, this definition focuses on the learners' consciousness and perception in the crosslinguistic similarity and differences. And it echoes with the nature of transfer in comprehension as mentioned in Chapter Two. Previous research on syntactic transfer, however, usually studied transfer in production and viewed syntactic transfer as a carry-over of the syntactic structure of the previous language to the target language, and mostly negative (as in Chan, 2004). For example, incorrect placement of verbs is identified as negative transfer from Chinese as the adverb positions in Chinese are different from those in English. Going back to the current findings, a possible reason for the stronger correlation of syntactic transfer with transfer in tense and aspect is that both of them are related with the traditional notion of "grammar" in second language learning. This demonstrates that when a learner is sensitive to syntax, or sentence structure, he or she must be at the same time sensitive to other aspects in the morphosyntax, such as tense and aspect, and thus the learner is more likely to make correct use of the knowledge of English tenses for the understanding of French PC. These results show a strong connection between syntax and morphology in the acquisition of a new language in terms of crosslinguistic influence, interaction and associations.

5.5 Discussion of Research Question 4

Results in the previous chapter showed that general L2 proficiency affects overall performance of comprehension in L3 French. The high proficiency group scored significantly higher ($p < .05$) than the low proficiency group in terms of the overall comprehension of texts and sentence in French PC. The accuracy reflects the understanding of PC, the vocabulary acquisition in French and the appropriateness in the expressions (in translation) in English. Relevant literature addressing this issue is

scant as mentioned earlier in Chapter Two. Nevertheless, results in this study supports the most recent study by Jaensch (2009) investigating the effect of L2 proficiency on the acquisition of uninterpretable features in L3 from the generative perspective. Her study shows that L1 Japanese learners of advanced L3 German proficiency with a higher L2 English proficiency outperformed learners with a comparable L3 German proficiency but a lower L2 English proficiency on the forms that realize uninterpretable gender and case values on the determiner and adjective. The implication under these similar results is that L3 learners with a higher L2 English proficiency have generally established a metalinguistic awareness of how to learn a language well by using cognitive skills. All participants started learning English after puberty (around 12), which means that they are not like bilingual children who started learning the first and second language at the same time and have automatization of both languages. The experience of learning a new foreign language English has prepared them the knowledge of learning a new foreign language which is typologically close to the previous one. As the languages are similar, the skills in learning the first foreign language may easily be transferred to the learning of a second, also cognitively. Another possible reason for learners with higher L2 proficiency to out-perform those with lower L2 proficiency in the acquisition of L3, is foreign language aptitude. These students with higher L2 English proficiency may be better at learning languages in the first place, because they have a higher language learning aptitude. There have been well-established claims in the similar vein traced back to McLaughlin and Nayak (1989), who remarked that "once a person has learned a few languages, subsequent language learning is greatly facilitated" (p. 6). Several other researchers, such as Bialystok (1986, 1987, 1991), Yelland, Pollard, and Mercury (1993), and Thomas (1988, 1992) show that bilinguals (in this study, extended to proficient bilinguals) have a better understanding of metalanguage, i.e. explicit language

information or the organization of language systems. This explicit knowledge speeds up the learning process of subsequent languages. The most recent research (Thomson, 2008) even shows that language aptitude seems to be a better predictor than previous language experience for success in the learning of beginner Portuguese as an L3 with various language backgrounds.

As regards the errors induced by lack of proficiency in French (ProF) and English (ProE), the previous chapter has demonstrated the manifestations of ProE, the first one being "have + do," as in " I have visit [*sic*] my grandma." A possible explanation may be the reflection of "the bottle neck hypothesis" (Slabakova, 2008, cited in White, 2010). The hypothesis suggests that functional morphology is the bottleneck of L2 acquisition, where adult L2 learners often omit inflection and function words or resort to default forms. Another possible reason may just be the failure of monitoring the speech, as a lot is going on in their mind in the translation practice. They have to think about the right tense to use, and then mind the inflections coming with the tense which does not exist in the Chinese language. The second error form is the "double marking" of past tense negation "didn't + past tense form." It is an example of what James (1998) called over-generalization under the major category of intralingual errors. The sentences such as "She didn't went [*sic*] to her office," could have been caused by hypercorrection. A sense of insecurity related to past tense marking could have produced this type of error. As Chinese learners realize that their mother tongue and the target language verb systems differ, it is possible that they gave both the auxiliary "do" and the main verb "go" past tense inflection to ensure against errors. Another possible reason is that irregular verb past tense forms such as "went" have been intensively studied in the classroom instruction and drilled after class. It has been automatized as a chunk, which can be considered as memory-based items, while "didn't + do" structure constitutes a

rule-based learning. As the latter is less strong than the first type of items (P. Skehan, personal communication, November 15, 2009), the learner usually starts out from the items more ready in their mind. The English teachers in China usually overemphasize the past tense form markings in the instruction of English past tense for Chinese learners, while the negation in past tense is less commonly used. This over-emphasis creates more attention whenever a past tense form is involved. Therefore the order of attention the learner pays to when he/she intends to use a past tense should first be the main verb, the inflection on the main verb, and then the negations, finally the free of inflection on the main verb.

5.6 Discussion of Research Question 2

As mentioned above, a major cause for inaccuracy in the comprehension of French PC is the negative transfer from English. This section will look into the matter of transfer in tense and aspect particularly (both positive and negative), and see how the native Chinese learners of French with L2 English associate the French PC with English tenses.

To give a more general picture across twenty participants, the researcher has provided detailed analysis as that in Chapter Four for each verb from the results of twenty participants in second round comprehension (because of the limited space, please refer to Appendix K). The following discussion is based on the analysis. It will give interpretations for the patterns generalized from the qualitative data. Two major sections will involve transfer cases from Chinese and from English, as both are found in the comprehension of French PC. Unexpectedly, the results are inconsistent in that there is hardly any universal pattern found for the association between English and French tenses, or transfer in tense and aspect from English. Previously before collecting data, it

was anticipated that there would only be situations of students being unable to tell which PC sentence should be equivalent to simple past tense and which to present perfect, but it turns out that besides the difficulty in distinguishing the two possible tenses, they have confused a lot of English tenses in the comparison between French and English tenses, which reflects problems in their English interlanguage tense system.

5.6.1 System transfer from Chinese in tense and aspect

System transfer from Chinese (all negative) can easily be observed. Whenever it occurs that there is no tense marker on verbs, it shows influence from Chinese. In English, the use of tense-aspect morphology is obligatory and relied upon to indicate temporal locations of events or states. Chronological sequencing and contextual clues are helpful only in ordering a sequence of events as one following another and temporal adverbials only serve to provide *more specific* information about temporal locations. In contrast to native norms, as documented in Yang and Huang (2004), Chinese students learning English quite often ignore the necessity to mark tense-aspect because, to them, contextual clues and lexical expressions have provided enough temporal information.

Bardovi-Harlig (1999) summarizes the three natural stages that L2 learners of temporality of all L1 backgrounds have to go through, which is a gradual sequence of shift from relying on pragmatic to lexical to grammatical devices. Yang and Huang's (2004) study adds that an L1 (a tenseless) language may reinforce learners' natural tendencies and as a result prolong the more pragmatic and lexical period in the tense-aspect acquisition process. It can be seen clearly that this "prolonged period" has been extended even to the upper-intermediate to advanced learners such as the English majors in the present study. And it still influences the initial stage of learning of L3 with a tense system.

In the present research which investigates transfer in L3 (also a [+tense] language as English), influence from Chinese as in L2 tense and aspect acquisition is also observed. The part of "text" has more transfer from Chinese than the part of "sentences" just because the context of time was given only once in the very beginning of the "text" while the "sentences" have time settings within each sentence. For example, Verb 2 (V2) has six cases of "STN (Chi)"; V5 has seven cases; and V6 seven cases, while some others, such as V1, V7, and V9, all have five cases. These verbs are all from the part of "text." For Verb 7 (*il est sorti* = "he went out"), four participants (participant #3, #9, #19 and #20) mentioned that they did not mark past tense because they failed to pay attention. For V9 (*Sa femme a attendu toute a nuit* = "His wife waited for a whole night"), the reason for subjects' relating present tense with PC is also the influence from Chinese. This sentence is the farthest from the time adverbial *hier soir* (= "last night"), thus it is very likely that the participants have already forgotten about the time setting for the event.

Interestingly, for V8 (*Il n'est pas revenue* = "he didn't come back"), participant #10 said that: "I think PC is a past tense in French, but I don't think I can say 'didn't come back,' because it means '*hai2 mei2 hui2lai2*' = 'not come back yet' in Chinese." Sometimes learners would like to use the Chinese meaning to guess the equivalent tense in English. For example they add *hai2* (= "still") during their first round comprehension of meaning in Chinese for the French sentence. When they were asked to think about the form of tense in English in the second round, they recalled the *hai2* (= "still") which indicated a grammatical aspect of "something is being done, but not completed yet," close to "yet" or "still" in English. As a result, they deliberately forced themselves into having this feeling of perfectiveness in their mind.

Participant #20 is a special case of being seriously influenced by the temporal

system in Chinese. She did not pay any attention to tense throughout the whole task and often produced English equivalents without an auxiliary verb or with main verb standing there alone without inflection as in V10 ("you still not finish [*sic*] your homework?"), and V11 ("I still not start [*sic*] yet"). In addition, her English translation lacked verbal morphology as in V20 (*il'est deja parti* = "He has already left"). Her translation was: "He already leave [*sic*]."

In summary, transfer from Chinese is manifested in the lack of knowledge of tense and the direct translation from the Chinese meaning of French into English in the second round comprehension of French PC.

5.6.2 Patterns of Transfer from English in tense and aspect—a dynamic system

The influence of English interlanguage system on the comprehension of French tenses constitutes a dynamic system. The following are some "patterns" generalized from this system based on the second round comprehension of Task One. Some participants may possess all the patterns while some only possess several of them, or only one of them.

Time adverbial as tense reminder

In Yang and Huang (2004), they discussed an interesting unique characteristic of Chinese learners of English tenses. They found that "temporal adverbials seem to be gradually shedding its responsibility as tense substitutes and assuming a different function: reminders for the use of verbal morphology" (p. 65). This is believed to be a special feature in the interlanguage of Chinese instructed students of English. And they evidenced that the formal classroom introduction to different tense-aspect forms is responsible for an early start in tense-aspect use, and a particular kind of training should be the reason why temporal adverbials can function as a kind of reminder for the use of

certain tense-aspect forms. Yang, Huang and Lee's (2000) examination of Hong Kong English textbooks reveals that textbook writers depend heavily on adverbials of frequency (*everyday*, *always*, *usually*) to cue the simple present tense, on deictic and calendric temporal adverbials (*yesterday*, *in 1990, now*) to cue the simple past form or the progressive form, and on adverbials like *already* to cue the present perfect form. This is exactly the same case in mainland China, as shown in the most popular grammar books used in high school (e.g. Bo, 2008; Zhang, 2009). And this is strongly confirmed in the current study through the students' translations from French tense to English tenses. It can be seen that how learners understand the temporal adverbials in French directly influences their decision about which tense should be translated into in English. The following eight examples are extracted from the reports by participants in the follow-up interview on temporal adverbials for some of the verbs.

The first example is the time adverbial *comme chaque jour* (= "as usual") for V2. It means "as usual" in English, but literally, its form looks like "as everyday." If the learner is not familiar with the word *comme* (= "as"), he or she may easily generate a wrong guess that the whole adverbial simply means "everyday." Participant #12 remarked that whenever she saw a time adverbial like "everyday," or words close to "usually," she would think that this is an action done very frequently by the speaker, then there is no doubt that she should use present tense only, regardless of the fact that they are having doubts on why a past tense form in French can have a present equivalence in English. This is a strong evidence for the emphasis of instruction on "everyday" as a sign for present tense.

The second example is *puis* (= "then") for V3. Some students had a false retrieval of the meaning of this time adverbial as "during" in English, which is used to represent the length of time of an action that is while the action is happening. Therefore, instead

of using no aspect past tense, they chose to use progressive aspect.

The third example is *toute la nuit* (= "all night") for V9. Five of them used progressive aspect for this sentence, where a no aspect past tense should be placed. They said that the time adverbial *toute la nuit* (= "all night") shows continuity. And they are so overwhelmed with the idea of "continuity" that they have totally forgotten the time setting in the very beginning of the text, which is "last night" (something that did not last until present).

The fourth example is *depuis* (= "since") for V14. This verb should be in perfect aspect present tense. Participant #4 (P#4) said that he thought *depuis* (= "since") means "during," therefore a simple past tense should be used. But for P#6, he believed that "during" means that something was happening, therefore a progressive past should be the right tense. P#8 made the similar judgment with P#4 but she mistook *depuis* (= "since") for "in," which gave her more reason to believe that it should be simple past tense rather than present perfect. After she was told that it actually means "since" rather than "in," she immediately replied that "it should be present perfect then." This demonstrates that the misunderstanding of time adverbials directly results in wrong association between English tense and French PC. A special case is P#16, who in the very beginning chose to say "Where have you been working since 2000?" and later changed it to "Where did you work after 2000?" as she was not sure which of the two is the meaning for *depuis* (= "since"). In other words, if it means "after," then it should be "Where did you work after year 2000?" On the other hand, if it means "since," it should be "Where have you worked since year 2000?" Finally she said that both are possible. Obviously, she has gone through a very complicated thinking process.

The fifth example is *ne...que* (= "not...until") for V15. This verb should be in no aspect past tense. Among the participants who associated this PC verb with perfect

present tense in English, two of them (P#11, #19) gave the reason in the follow-up interview: it is because they were taught that whenever they saw "until" with a specific time, they had to use present perfect tense, as it shows "continuous action carried out for a period of time in the past and ended."

The sixth example is *pour* (= "for") for V19. This verb should be in perfect aspect present tense. Most of the incorrect association for this verb is due to the misunderstanding of the preposition *pour* (= "for") as part of the time adverbial. In the follow-up interview, some of them recalled their thinking process in detail. For P#13 and P#20, their first impression for *pour* (= "for") is "in" or "after," therefore they did not hesitate but chose to use the present tense indicating future. Some of them (P#1, #4 and #10) were not certain whether it should be "in" or "for." They first assumed that it should be "for"; but then they convinced themselves that it should not be, as it is not correct to say "I have returned for three days" since "return" is a non-durative verb. Then they denied their previous assumption of "for" and leaned towards "in," while they became even more confused as "in" is typical for a tense indicating future. P#1 finally decided to use the present tense indicating future; P#4 and P#10 could not make either "in" or "for" sound logical, and decided to say "I returned three days ago" no matter how uncertain they were about the "ago." Nevertheless, it sounded the most possible as they were perfectly clear that PC should be a tense related to the past.

The seventh example is *déjà* (= "already") for V20. 18 out of 20 made the right association for this verb, which is present perfect tense. As mentioned by P#2 in the interview, "already" in their mind is a very strong sign for using perfect present tense. This agrees with what is described in Yang, Huang and Lee's (2000) research that the instruction on *already* as a tense reminder has shaped their mindset of treating adverbials like *already* to be the reminder for present perfect tense.

The final example is *encore* (= "yet") for V12. "Yet" is another typical sign for present perfect tense, besides "already." Thirteen of them made the correct assumption of equating this French sentence with perfect present tense in English. However, Participant #12 and #14 were not sure about what "encore" really means; they mistook it for "again," so they used simple past tense instead.

The influence of the type of the verb on the use of tense: Aspect Hypothesis

Even though lexical aspect is not the focus of this study, a few examples are found which indicated that the meaning of the verb influences the use of tense. It is largely consistent with the Aspect Hypothesis put forward by Bardovi-Harlig (2000). It predicts that when referring to the past, learners of all L1 backgounds will use past tense marking more often and more correctly with telic verbs (verbs expressing a result, e.g. *bought the book*) than itelic verbs (verbs with no definite end points, e.g. *chatted with one another*), will prefer progressive markers for activity verbs (e.g. *dancing*), and will prefer present tense for stative verbs (e.g. *see*). In the classroom instruction, students were taught that "non-durative verb" (the term used in the textbook) should not be used with present perfect tense. But most of them did not memorize the rule quite clearly and spent amount of time thinking about the right tense to use, as in the following examples:

Example 1: *bavarder* (= "chat, talk") –V2: two of them used progressive aspect instead of no aspect past tense for this verb. In the follow-up interview, they explained that this verb sounds more like they are "doing" it (the action is still in process) than they "did" it that day (the action is completed), which means that this verb is atelic (with no natural inherent endpoint) in their mind. This finding argrees with the Aspect Hypothesis that learners will use past tense marking less correctly with itelic verbs.

Example 2: *regarder* (= "watch") –V3: For this verb, a no aspect past tense should be used. However, progressive aspect is the one they prefer to associate with the

verb "watch" (frequency of 9). They said that progressive aspect fitted better with the "scenario of activity they pictured in their mind." This again echoes with the Aspect Hypothesis, which states that learners prefer progressive markers for activity verbs.

Example 3: *revenir* (= "return") – V19: a tricky problem for this verb is that the translation should not be "I have returned for three days" in English, even though "revenir" means "return." Instead, it should be rephrased as "I have been back for three days" or even "I came back for three days." And this indeed caused confusions for the subjects of the current study. For example, P#4 said that she knew it wasn't right to say "I have returned for three days," because "return" is a non-durative verb. But at the mean time, she was having doubt on the recall of the meaning for the time adverbial *pour* (= "for"). She was not sure whether it should be "for," "in," or "ago." Then because of this inappropriateness in saying "I have returned for three days," she decided to use "ago" as in "I returned three days ago," which is correct in English, but not the right translation for the original sentence in French.

Item transfer—the failure of inhibition on "avoir"="have"

The fourth type of PC is the most distracting and confusing for learners of French with an English background in the present study. As shown in the previous chapter, it has the lowest accuracy among all types of PC. And unfortunately, it is the most common type of French PC. Collins (2002) has documented the reverse situation for the influence of this type of PC on the learning of English. He noted that simple past is expressed in French with morphology that is structurally similar to English perfect morphology, so the French speaking learners of English correspondingly show a tendency to mark simple past with perfect morphology. For subjects of this study, in a similar fashion, they have a tendency to translate the French PC with a structure of "*avoir* (= "have") +p.p." meaning simple past tense into tenses with perfect

morphology.

For example, for Verb 9 in the part of "text" which actually belongs to the fourth type of PC, 6 participants used perfect aspect morphology, and two participants did the same for both Verb 2 and 3. These all reflect that they are superficially making equivalence between all forms of *avoir* (= "have") and the English "have," which means the perfect aspect. The three Type Four verbs in the part of "sentences" have even lower accuracy rate. As have been discussed in detail in Chapter Four, participant #14 mentioned that when she sees the verb *avoir* (= "have"), she needs to "try very hard to inhibit the tendency of associating it with the English equivalent word "have." In contrast, participant #17, who is successful in understanding all the French PC sentences in Task One, told the researcher that she never treats *avoir* (= "have") as an isolated word "have" in English. Instead, she conceives "'*avoir* (= "have") +p.p.' structure as a complete whole." This "complete whole" is equivalent to past tense or present perfect tense in English. When it is in a context where perfect present tense should be used, she just used the right tense without thinking about what exactly *avoir* (= "have") is equivalent to.

Difficulty of Structure of the French PC

Previously the researcher has compared the accuracy rates of the four types of PC differentiated by the difficulty of acquisition; it showed that Type Two PC has an accuracy rate and percentage very close to the Type One PC which has the highest accuracy rate. This is confirmed in the students' own reports, where it is found that the structure of Type Two PC (*être* (= copula verb) + p.p. = no aspect past tense) is indeed easier to be acquired than at least the other two types, and induces fewer errors.

For example, Verb 8 in the part of "text" has got an accuracy of 90%, most participants said that they are familiar with the structure "*Il n'est pas* + p.p." meaning

"he didn't do..." Same as Verb 8, Verb 18 has a higher accuracy of 95%, with the same structure "*n'être pas* (= "didn't"). This is also true with the other verbs of this type, e.g. V17 and V17. In general, this type exerts a very high accuracy among all types, showing that this structure of PC is easier to acquire than the other ones. The learners are so familiar with the English equivalence of this type of PC that it even creates problem for the understanding of Type Three PC: *être* (= copula verb) + p.p. = perfect aspect present tense. To illustrate, Verb 21 belongs to Type Three PC, but participant #9 still associated it with no aspect past tense in English, for which she explained that it was because she was too accustomed to associate PC with *être* as auxiliary verb with no aspect past tense in English, especially the negation of this type of PC with "didn't." But why is Type Two PC easier to be acquired than even the first type (*avoir* (= "have/has") + p.p. = perfect aspect present tense), which is more straightforward and direct? The explanation by the researcher is that according to the Hierarchy of Difficulty Hypothesis (Prator, 1967), the PC with *avoir* (= "have/has") belongs to the "split" level (one NL item becomes two or more items in TL—level 5) in the hierarchy while the PC with *être* (= copula verb) belongs to the level 4—overdifferentiation. The fourth level is easier to be acquired than the fifth level because it involves learning of a completely new item, and it does not contain a reshape of the previous knowledge that requires more effort. One thing to be noted is that there is a recategorization of the types of PC involved for the support of the above hypothesis, which is different from the previous one in Chapter Four. Without considering the different English equivalents but only the structure, the PC can be categorized into two types only. In other words, we can combine the first and fourth type of PC as one type with a structure of "*avoir* (= "have/has") + p.p." and the Type Two and Three together as PC with a structure "*être* (copula verb) + p.p." Therefore, in general, the average accuracy of PC with *être* (68.8%)

is higher than the average accuracy of PC with *avoir* (47.5%).

The effect of instruction: A complicated thinking process

For many Chinese learners of other European languages, the use of tense has been one of the most difficult components of grammar that requires a lot of extra effort to learn and practice and finally to acquire. Especially for adult learners of English, they use a lot of consciousness, cognitive skills and logical thinking into judging what tense should be used in a certain situation. A typical student in mainland China has been used to do a lot of grammar drillings on tenses in and after class since high school. This conscious learning of tenses is reflected in the complicated analyses of tense during the translation from French PC into English. The two outstanding cases are participant #15's report on verb 15 and participant #8's report on Verb 9.

Participant #15, after a lot of hesitation, finally chose to use perfect aspect past tense instead of no aspect past tense for the sentence *Nous ne sommes rentrés qu'à six heures du soir* (= "We didn't come back until six in the evening"). She has gone through a complicated thinking process as follows, which was reported in the follow-up interview:

Step 1. PC with aux. *être* + p.p. means "have/has been" in English.

Step 2. *du soir* means "last night," it is a past time

Step 3. "until six o'clock" means that the event happened and ended at a point before the past time "last night," therefore it is an event in the past of past, I should use past perfect tense: we hadn't been back until 6 last night.

Participant #8's thinking process for verb 9 is even more complicated. The original sentence is as follows:

Sa femme a attendu toute la nuit.
Standard translation: His wife waited all night/for a whole night.

Her process of thinking, however, is much more complicated than was previously expected:

Step 1. This is a past tense in French.

Step 2. I see *toute la nuit* (= "the whole night"), it should be progressive—"waiting for a whole night"

Step 3. I see *a,* it is equivalent to "have/has," so it should be "has been waiting for a whole night"

Step 4. Reflecting back to point 1, it should be "had been waiting for a whole night."

The typical instruction on tenses in China is the rote learning of "for this situation you have to use this tense." Usually students use their cognitive skills to analyze the temporal situation of a sentence and then logically map the situation onto the rules that they have born in mind. When they fail to pick one tense out of the many, they would be asked to use their so-called "language sense" to feel and make a decision.

5.6.3 Crosslinguistic interaction in third language acquisition: a dynamic systems approach

The previous section has exhibited a very comprehensive phenomenon observed in the translations of the twenty participants. Most interestingly, these patterns are not linear and straightforward. Instead, it is unpredictable for most of the participants. One may possess all the above patterns in the crosslinguistic association in tense and aspect between French and English, others may possess only one or several patterns. Throughout the whole discussion, a very clear trend has been discovered, which is that crosslinguistic influence is no longer a simple and linear factor that can be analyzed and categorized easily from the language production itself. The introspective data has provided us with a much richer and more precise data into the learners' own perceptions

on the crosslinguistic differences and similarities and into their complicated and even chaotic thinking process in the understanding of tense in a third language. Besides these, one still has to go deeper into the learners' minds and know more about the interactions of language systems in their heads. Therefore the researcher hereby proposes a model under which framework crosslinguistic influence can be studied.

A look at the history of research in SLA studies also makes clear that transfer is a much more diversified phenomenon as originally expected in early studies of contrastive analysis where the mainly negative influence of the L1 on the L2 formed the dominant object of investigation. Jessner (2003) also noted that the study of TLA is methodologically based on studies on SLA and bilingualism; that is research on TLA combines two fields of investigation which hitherto have ignored each other in many respects. Herdina and Jessner (2002) further argued that the conflicting evidence found in the study of transfer which they termed "paradox of transfer" "is attributed to two factors 1) terminological confusion concerning the type of phenomena to be classified as transfer phenomena, and 2) a theoretical confusion relating to the nature of transfer phenomena, which cannot be restricted to specific modules" (pp. 26-27). Therefore, they argued that in the multilingual context, transfer is of an intermodular nature and that a large number of transfer phenomena are not transfer phenomena at all but are to be attributed to *cross-linguistics interaction* (CLIN). CLIN was proposed under the framework of "dynamic systems theory" (DST).

Based on dynamic systems theory, language development is characterized in multilingual system as a *non-linear, reversible and complex process* where the development of the individual system is dependent on the interaction of the pre-existing systems and those systems in development. An individual's language with its numerous subsystems is in constant flux and the system as a whole and the subsystems will show

a great deal of variation. De Bot *et al.* (2007) therefore believe that what DST provides is a set of ideas and a wide range of tools to study complex systems. We can no longer work with simple cause-and-effect models in which the outcome can be predicted, but we must use case studies to discover relevant subsystems and simulate the processes. And it is only in the understanding of the dynamics of the multilingual system that multilingual phenomena can adequately be understood (Jessner, 2002). Multilingualism in this dynamic model takes a holistic approach; hence the multilingual system is not the product of adding two or more language systems but a complex system with its own parameters, which are exclusive to the multilingual speaker. It is therefore suggested by Jessner (2003) that this dynamic model of multilingualism can provide a bridge between SLA and bilingual research as it focuses on developed and developing systems, or systems in different stages of development.

This explains why in the very beginning, transfer is defined with a focus on the learner-self. In this study by far, the researcher has looked at the interaction of languages in the comprehension of an L3, rather than the carry-over of one non-target language to the target, which is how transfer has been studied under the SLA framework. Discussions in this section have presented us with the evidence to support the above model that L1and L2 language systems interact with each other to influence the comprehension of L3 French PC. The three languages are at different developmental stages: L1 is a native language, while L2 is a language in the intermediate to advanced stage, while L3 acquisition is still in the initial stage. Not only crosslinguistic influence was found from both the L1 and L2 on L3, but also L2 tense system as a whole at a developmental stage, on the understanding of L3 tenses. The L2 tense system has a lot of patterns and problems which is manifested in the translation from L3 French to L2 English, and is varied from individual to individual. In the mean time, in the

developmental stage of L2, the L1 influence is still at play. In summary, we can see a transitivity of influence from L1 to L2 to L3 and interaction between L1 tense system and L2 interlanguage tense system on the L3 tense comprehension.

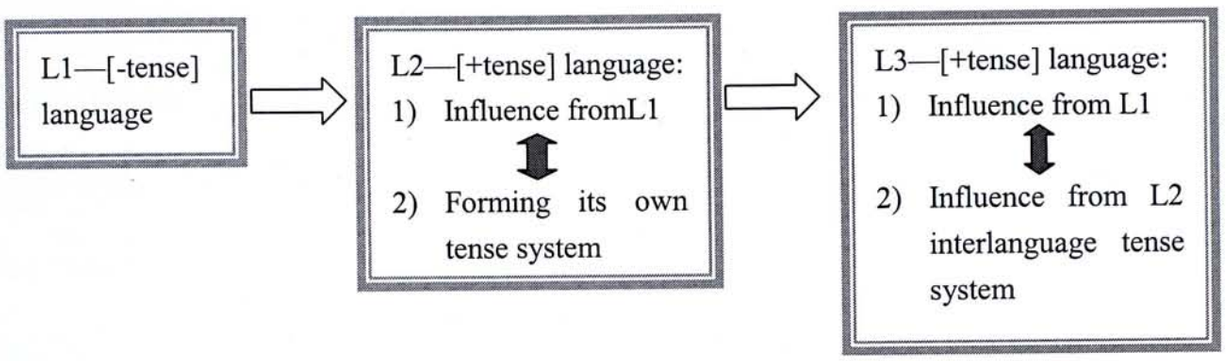


Figure 5.1. The illustration of the interactions between L1, L2 and L3 tense systems

5.7 Conclusion

In summary, crosslinguistic influence in multilingual comprehension is a complicated matter to be investigated as already been pointed out in the literature of multilingual acquisition (e.g. Cenoz, Hefeisen, & Jessner, 2001, 2003; Herdina & Jessner, 2002). This study takes a novel perspective from the learner to probe into the cross-linguistic interaction or the mapping between the target and previous languages in the ignored area of transfer in comprehension instead of production.

The findings in this study suggest that the dominant source of transfer is from the language that is typologically closer to the target language, especially in terms of lexical transfer. In addition, this study confirms that transfer of form is typology-based. However, if one looks closely at lexical representation, semantic mapping is usually between L1 Chinese and the target language French, as it is greatly influenced by the instruction, the textbook and even the learning style. As for transfer in tense and aspect, since the tense systems are distinct among the three languages (L1 Chinese is a tenseless language while the two non-native languages are both tense languages), the

dominant source of transfer still comes from the typologically closer language, English. However, in terms of negative system transfer, more comes from Chinese than from English, as tense is both marked in the non-native languages and is an absent feature in the native language, which causes difficulty for acquisition.

Looking at transfer in tense and aspect particularly, whether the learner can understand PC correctly or not is directly related with his or her understanding of the distinction between the English present perfect and simple past tense as these two tenses are the only two English equivalents for PC. And the general English grammar proficiency can also be a predicting variable for the number of positive/negative transfer in tense and aspect. Unexpectedly, general L2 proficiency does not have any relationship with transfer in tense and aspect. This result can be newly added to the literature of the role of L2 proficiency in the CLI in TLA, which mainly focused on the influence of L2 proficiency on the source of transfer. Interestingly, this study found that there is a strong connection between syntax and morphology in the acquisition of a new language with regards to cross-linguistic influence, interaction and associations.

Furthermore, even though the effect of general L2 proficiency is not great on the number of cases of transfer in tense and aspect, it does show significant influence on the overall performance of the comprehension in L3. The high L2 proficiency group out-performed the low L3 proficiency group in terms of overall accuracy in Task One. Two reasons can account for such significant difference. One is the experience and cognitive skills developed from the learning of the first foreign language English (nurture), the other reason may be foreign language learning aptitude which determines the ability of learning a foreign language in the first place (nature).

Finally, for the purpose of finding out the pattern of transfer in tense and aspect, the researcher further examined the reports from 20 participants regarding the choice of

tense in the second round comprehension (the translation). Five potential patterns are generalized by observing the phenomenon of the association between French and English tenses: a) time adverbial works as tense reminder; b) the influence of the type of the verb on the use of tense which agrees with the Aspect Hypothesis; c) negative item transfer happens from time to time because of the failure of inhibition on *avoir* ="have"; d) the difficulty of the structure of PC may also influence the accuracy of comprehension on a certain type of PC; e) the effect of instruction results in the complicated logical thinking process. All the above has yielded an important conclusion which is the adoption of dynamic systems approach as a framework for studies in the multilingual context, as the languages interact in the students' minds which does not show much general linear pattern that can be applied to most participants. All of them show different patterns in the comprehension of French PC, which is related to many factors as aforementioned, learning style, instruction, proficiency, etc.

The results in the study diverge from the expectations the researcher had at the very beginning of the research where she thought the students would be confused about the only two English tenses equivalent to PC. However, it turns out that if they are not informed of the contrastive analysis between French and English tenses, their understanding of French tenses can be really problematic as manifested in the association of many other English tenses with French PC. Their tense system of L2 English is so chaotic that it does not help their learning of another [+tense] language and they seriously need some guidance on the comprehension of tenses of the new target language by comparison with a familiar [+tense] language. This process itself may also help them reversely in the understanding of English tenses.

6 CHAPTER SIX

IMPLICATIONS, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

6.1 Introduction

The current chapter is mainly divided into three major sections. The first section talks about the pedagogical implications of the present study, which explores the potential advantages of incorporating contrastive analysis into the teaching of L3 French tenses for English majors in China. The second section aims at pointing out the limitations of this exploratory study and in turn gives suggestions for future research in the last section.

6.2 Implications for L3 instructions: The issue of metalinguistic awareness and cases of noticing from the retrospective interview

Results and discussions in the previous chapter have revealed that if students from an intact class like participants in the current study, who were not instructed on which possible tenses that PC is equivalent to in English, they could make wrong associations between English and French tenses because their understanding of English tenses is not complete and perfect. The teachers in the L3 French language classrooms could help them speed up the process in the acquisition of French PC by introducing this contrastive knowledge to them, as being English majors, they also have this cognitive awareness to look for it themselves by all means.

In Task Three follow-up interview, the first question the researcher asked the participant was: "Do you know which tense or tenses in English is equivalent to French PC?" Only eight students out of twenty could give me a very definite answer that it can be either simple past tense or present perfect tense depending on the situation. None of

the eight students told the researcher that they had been instructed about this metalinguistic knowledge about French and English tenses. Instead, they figured it out by themselves through their own observation or by searching for materials introducing English vs. French tenses. They thus have metalinguistic awareness of similarities and differences between English and French tenses. However, surprisingly, even within these eight students who are comparatively clear about the possible equivalent tenses in English with French PC, only two of them consistently implement this perception into their real task (which means that they used the above two tenses only). Interestingly, after the interview, the researcher calculated the number of noticing of errors for each individual during the questions and answers in the interview, and found out that this task has actually helped them noticing their errors in Task One and most of them finally realized that their previous understanding of French PC had some problems (see Figure 6.1). They said that they were happy to be informed of which tense PC is equivalent to in English. It is actually facilitative in understanding the reference of French tenses. However, their French teacher did not encourage them to do so due to the fact that he himself is not good at English (mentioned by one participant). As a result of the above reports, the present study proposes to incorporate contrastive analysis into the teaching of French tenses to English majors whose native language is Chinese. However, at the present stage of the this study with reference to the previously presented results, this study does not encourage the use of CA for every aspect in teaching French, but only in grammar, or more specifically, French past tenses.

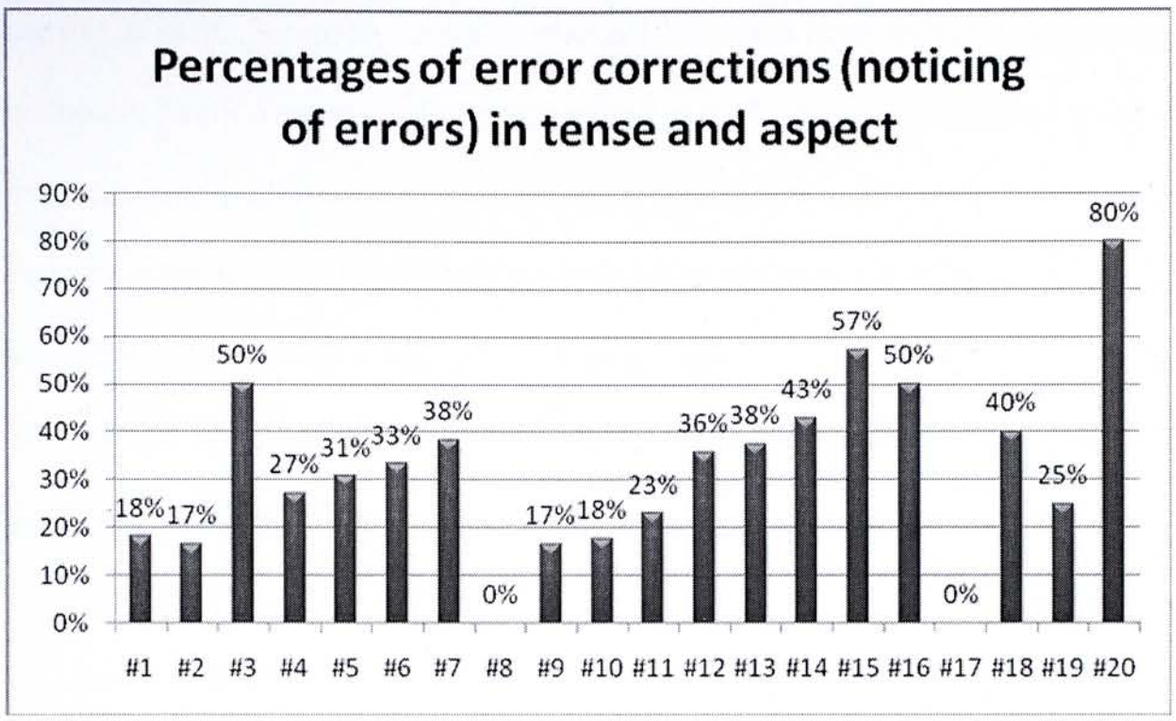


Figure 6.1. Percentages of error corrections (noticing of errors) in tense and aspect

In fact, numerous comparative studies of exponents of inductive and deductive approaches (or implicit and explicit methods) have been conducted in recent decades providing evidence that the latter is favored (e.g. Alanen, 1995; Dekeyser, 1997; Doughty, 1991; N. Ellis, 1993; Rosa & O'Neill, 1999). A safer conclusion one can draw is that, in the teaching of foreign language grammar to adults, such techniques as grammatical explanations, deductive presentation of the subject matter, translation, the use of the native language and contrastive analysis are jointly superior to the combination of techniques constituting the implicit method. In the present study, the readdress of the use of CA as a deductive approach in teaching grammar in a third language is the result of the special need of learners learning a second foreign language which is close to the previous one but distant to the native language. Contrastive analysis was previously regarded as an integral part of behaviorist paradigm, then it gradually fell out of favor in the 1970s in North America as more studies done in CLI concluded that interference from native language only takes up a small proportion of errors in language learning and thus it should not be of primary concern. However, the

use of CA in the European context is markedly different from the CA as structural method in North America. It forms an integral part of a deductive approach, where it is used as an aid to offer explanations to learners (discussed in Sheen, 1996). In the same vein, the most influential empirical study that has compared the effectiveness of an inductive approach with a deductive approach based on CA input is Sheen's (1996). The findings of the study have demonstrated that the treatment of the CA input in the deductive approach has been more effective than the inductive approach in minimizing the error rate. The strong implication is that the current practice in teaching ignoring the CLI aspect of language learning would appear to be ill-founded, at least in the case of teaching for students sharing a common L1.

The current researcher takes the same stand as Sheen's (1996) that the use of CA in language class should not be completely abandoned, especially in facilitating the explanation on grammar. As shown in the discussion of Research Question 3, the negative transfer rate goes up if the distinction between English past and perfect tenses is not well understood. This gives more reason and a stronger support for adopting this method in the teaching of French PC, at least to make sure that students are perfectly clear about what exactly PC is. Otherwise, as shown in the first round think-aloud, students would not pay any attention to tense in the comprehension of PC. One cannot imagine what would happen if the learners have to use the tense in actual production. One may argue that it does not matter whether they know about what tense PC is in English or not, as they can still understand the content perfectly well. But how do teachers know whether their learners have clearly understood the French tenses if the tenses were not introduced at the same time with the English tenses? There is no doubt that in comprehension, the approximate meaning is enough, but in production, they need to understand which tense should be used for what situation. Still, one can argue that

implicit methods are also useful for the acquisition of tense as they can gradually automatize without even knowing the complicated rules. However, by far, no proof has been provided that for adult learners, implicit method is more effective than the explicit ones as they are more cognitively mature while children are actually better at implicit learning (Birdsong, 1999).

In sum, empirical evidence is still needed for comparing the implicit and explicit methods in teaching grammar. However, from the existing evidence, it shows that explicit teaching can reduce error rates. Knowing how is as important as knowing why. Students should not be blinded of knowing "how" by avoiding to talk about "why" in class to avoid confusion.

6.3 Limitations of the current study

As an exploratory study, this study has several limitations:

First, this is the first study trying to quantify positive transfer and also transfer in tense and aspect. There were indeed tricky problems in coding the nature of transfer. Previously there have been studies investigating lexical transfer (see Jessner, 2003; Gibson & Hufeisen, 2003; also Hammarberg, 2009), and they didn't look at the nature of transfer. It is mostly because of the difficulty in defining and measuring positive transfer. The use of the evaluative adjectives positive and negative has been criticized by researchers primarily concerned with processes underlying transfer (Faerch & Kasper, 1987; Sajavaara & Lehtonen, 1989). There has been the issue of on what level positive or negative transfer should be distinguished, whether at the product or process level. This study distinguishes within process level only, which means that the researcher did not look at the final product, but only the correctness of perceptions or assumptions in process and whether the application of the assumption is helpful for the

learner. This study argues that positive transfer in comprehension is easier to be identified than in production. Nevertheless, although this definition did not cause much problem for judging transfer in tense and aspect, it created trouble for lexical transfer. One example is that the researcher may not know whether the "assumption" is correct or not if the student did not report clearly. Another problem is that the researcher might have missed out on a few situations where the assumption is correct or partially correct while the final product is not the right one. The effect could be both "positive" and "negative," depending on how one sees it. For example, the word *telecopieur*, a lot of them assumed that this is a machine that can use electricity ("tele") to "copy," which is "telecopy." This is close to the right word in English, and this is very positive and correct assumption, so it was coded as "LP (positive lexical transfer)." However, there is no such word as "telecopy," instead one has to say "fax machine." Therefore, there is still room for development in coding lexical transfer in comprehension. For transfer in tense and aspect, which is the focus of this study, the judgment on the nature of transfer is more straightforward. And the "assumptions" are easier to tell even though the final product may not be 100% correct.

Another problem in coding is the distinction between system and item transfer in tense and aspect for some places. Negative item transfer is easy to be identified, as participants are making equivalents between French and English grammatical morphological words related to tense which results in errors. But there is one place where it is difficult to tell whether it should be positive item transfer or positive system transfer. This special type of structure that causes problem is Type One PC. This type of PC has the same structure of French and English. When participants are giving right translations for the sentence such as:

Nous avons téléphoné aux clients déjà.
We-have-telephoned-at the-clients-already.
We have telephoned the clients already.

It was then difficult to tell whether it is positive system transfer or item transfer. The researcher tends to believe this is positive system transfer; that is why it was coded as STP instead of ITP. As it was found that all those who made the right association for this type of PC were also correct in some items for another type of PC which is in the same structure of this type but has a different English equivalent (simple past tense). Therefore the researcher had no reason to believe that participants are always superficially making equivalence between French *avoir* and English "has/have." However, on the other hand, it is also possible that this learner is making superficial equivalence for this particular sentence which the researcher was not able to tell from the translation itself as the participants were not required to think-loud during the second round comprehension.

Thirdly, some items are obscure, as they could be coded one way or another depending on how one looks at it. For example, some of them translated *toute la nuit* (= literally: all-the-night, "all night") into "all the night." It was first coded as negative transfer as the participants are making wrong equivalence between English and French words where they should be clear about the minor difference of expressions. But when looking at it again, the researcher thought it might be due to the lack of proficiency in English, or even a reverse transfer from French to English. But because this is not a natural production in English, there is not enough support for taking these two possibilities. Most probably, it should be the original category, which is negative lexical transfer. Another similar example is *telephone aux clients* (= "telephone the clients"); some translated as "telephone at the clients" when it should be without the preposition.

Fourthly, it has to be pointed out that even though the think-aloud process was

carried out smoothly and successfully during the task, there were some minor problems afterwards. During the coding process, if the researcher had doubts on the participant's intention (which created problems for the judgment) because the learner did not provide enough report on it, it was too late to go back to them and ask. It would be perfect if the researcher could anticipate and spot this lack of report on certain items on the spot. However, it requires the researcher's flash of wit, intense concentration throughout the long task, and a really careful reading into the introspective report during the process. This is definitely a high requirement on a researcher.

Finally, for the purpose of looking at the effect of L2 proficiency on CLI, participants should be chosen from a wider range of L2 proficiency rather than from an intact class. More students of other levels of proficiency of English should be included, such as beginner levels and intermediate levels instead of all being English majors.

To sum up, this exploratory study shows that a qualitative study may be more suitable for research on the behavior of CLI and transfer, as sometimes it is very hard to tell what is actually going on in the students' minds. This study is a first attempt at quantifying transfer, especially for the nature of transfer. Previous study has quantified lexical transfer in production (e.g. Hammarberg, 2009; Ringbom, 2007). They have given categories such as lexical switches and shifts. However, they have limitations too as they cannot go deep into the learners' minds for more detailed analysis, but only infer from the presented results of the production. Transfer fundamentally should still be psycholinguistic. Therefore, same as the other research into learning strategies and reading comprehension, think-aloud is still a valid method to be adopted, but with caution.

6.4 Suggestions for future research

This study has revealed that instruction and learning style may play a role in the transfer in TLA. It would thus be worthwhile to investigate type of instruction and learning style as a central variable in the transfer in TLA.

It has also demonstrated that the effect of L2 proficiency does not have a relationship with type of transfer, or nature of transfer but it does influence the outcome of TLA. It would thus be interesting to seriously take L2 proficiency as a central variable in the study of L2 acquisition. And language aptitude could be used as a mediated variable as well.

As previously mentioned, incorporating CA in the L3 instruction might be an effective way to facilitate the correct understanding of French PC. To testify this hypothesis, further research is needed to carry out an experiment on this teaching method in comparison with the traditional method using native language as medium of instruction or the communicative method in the teaching of French tenses.

The literature of TLA is in serious lack of research on the acquisition of tense and aspect. It would be especially interesting if the future research could go deep into the area of tense as research done in the second language acquisition. It would also be of interest to the generative researchers to know whether the transfer in the third language would be the same matter as in second language.

Because of the length of this thesis, the study did not endeavor in depth into the lexical representation in L3 comprehension. One could draw on the methods used in bilingualism for the study of trilingualism to explore the issue of lexical representation which is flourishing these years (such as in Hammarberg's edition (2009)). It could be the root cause for lexical transfer.

Finally, this study has attempted to explore the transfer phenomenon in

comprehension. It provided us with an overall positive picture of transfer, as opposed to a large amount of research in the past decade studying the negative effect of transfer while ignoring the positive aspect. Therefore, it is significant for researchers to shift the focus from the negative aspect to the positive aspect of transfer and take a broader vision which embraces all mixed phenomena including interference studied in SLA, and borrowing and switches in bilingualism (Jessner, 2003). The Dynamic system of multilingualism provides us with such a framework where crosslinguistic interaction (CLIN) is of great importance. A more well-rounded project in the future should compare the difference of CLIN effect in comprehension and in production.

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APPENDIX A Language Background Questionnaire

Date: _____ Time consumed: _____mins Subject #: _____

Section I: Personal Information

1. How old are you? (Please choose one from the five. If not, what age group do you belong to? _____)
请问您的年纪是？（请从以下五项当中选择， 如果不在五项中， 请指明您的大概年龄区间。_____）

- ○ 19
- ○ 20
- ○ 21
- ○ 22
- ○ 23
- ○ 24

2. Gender: 性别:

- ○ Male
- ○ Female

Section II: Language background

1. Please choose the languages that you have learnt besides your mother tongue Chinese (Cantonese is also regarded as Chinese), if your mother tongue is not Chinese, please stop here and return the questionnaire:

   请选择您学习过的外语 （方言不算在内），如果您的母语不是中文（或者任何一种中国地区方言），请立即交回问卷停止作答。

- ☐ English
- ☐ French
- ☐ Japanese
- ☐ Spanish
- ☐ Other

2. At what age did you begin learning these languages? How well can you read, write, speak and understand each one?
(1) barely / not at all (2) poorly (3) passably (4) well (5) very fluently

   您分别从几岁开始学习上述选择的语言的？您认为它们在听说读写分别都到达什么水平？
（1）几乎不会 （2）很差 （3）基本通过 （4）不错，很好 （5）非常好

Language:	Age:	Reading	Writing	Speaking	Understanding
_____	____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
_____	____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
_____	____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
_____	____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

3. Did your parents or other caretakers speak any language(s) other than Chinese to you at home? If so, which one(s)?
   您的父母或者监护人在家里除了说中文还会说别的外语吗？

   _____

4. Can you freely express what you are thinking in the head?
   请问您能很随意自然地表达自己的思维过程吗？

   ☐ Yes
   ☐ No
   ☐ Only sometimes

Section III: French instruction and exposure

1. How does your teacher teach you French? (please tick 'yes' or 'no')
   您的法语老师是怎样教授法语的？（请在下述描述中选择是或否）

a) Vocabulary is in the form of isolated word list Yes/No
词汇的学习主要依赖独立的词汇表

b) Explicit explanation on grammar, lots of exercises in grammar Yes/No
堂上很多语法解释和语法练习

c) Reading of difficult texts, and texts are analyzed in terms of content more than grammar Yes/No
阅读相对较难的文章， 重视分析语法而非内容

d) Mother tongue is used for explanations and translation Yes/No
主要使用母语教学，上课基本上中法对照

e) Lessons begin with dialogue, communication is emphasized Yes/No
课堂由对话开始，很重视交流沟通能力的培养

f) Only Chinese translation is given in the vocabulary list Yes/No
词汇表只有中法对照

g) Grammar rules are generated from the practice and exercise in French Yes/No
先陈述语法规则，再通过练习和讲解巩固语法，而不是完全由自己去发现

h) A lot of contrastive analysis between Chinese and French Yes/No
在语法或者词汇的解释中，老师会对比中文和法语

i) You are required to read aloud after the teacher Yes/No

您总是要跟着老师大声朗读

j) Great attention is paid to pronunciation at the beginning Yes/No
教学初，语音教学备受重视

k) Structural patterns are taught using repetitive drills, a lot of memorizations Yes/No
对于词组的学习就是反复朗读，很多机械记忆

l) A lot of contrastive analysis between English and French Yes/No
在语法或者词汇的解释中，老师会对比英文和法语

m) Abundant use of language laboratories, recordings and visual aids Yes/No
老师会使用语音室或者录音等等视频或者音频辅助设备

n) The course is taught in a very interesting way with communicative tasks or native materials Yes/No
课程非常轻松有趣，活动很多，并使用法国原版引进的教材

o) The teacher encourages speaking Yes/No
老师鼓励课上多开口

2. How many hours do you usually spend to learn French after class (per week) (not including the time for preparing for exams)?
请问您在课后每周花多少小时学习法语 （准备考试的时间不算在内）？

_____

3. How many hours do you usually spend on learning French before exams?
请问您在法语考试前每周花多少小时学习法语？

_____

4. What skill(s) in French do you practice after class?(if applicable)
您在课后都会做哪些法语练习？

- ☐ Listening
- ☐ Speaking
- ☐ Reading
- ☐ Writing
- ☐ Grammar
- ☐ Vocabulary

5. What material(s) do you use to practice French after class? (if applicable)
如果您在课后练习法语，会使用那些材料？

- ☐ Text book
- ☐ Native material
- ☐ Other non-native materials that I buy (or acquired online) for further learning

6. Do you like the French language?
您喜欢法语这个语言吗？

☐ Yes
☐ No
☐ Sometimes

7. Do you like learning French?
您喜欢学习法语吗？

☐ Yes
☐ No, just because I have to
☐ Sometimes

8. Please specify the reason and motivation that you learn French after the required course (if applicable)?
您课后主动学习法语的动机是？

_____

9. When was the last time that you saw or used French?
您最近一次接触法语是什么时候？ (给出大概的月份，不用太精确)

_____

10. When did you complete learning French passé composé?
您什么时候结束学习法语复合过去时？(给出大概的月份，不用太精确)

_____

11. When was your last contact with the French passé composé?
您最近一次接触法语复合过去时是什么时候？(给出大概的月份，不用太精确)

_____

APPENDIX B Guidelines for think-aloud training

Guidelines for Think-aloud Comprehension

Think-aloud Comprehension includes two stages:	
1st stage: **think-aloud** process	2nd stage: **retrospective** process
• Remember your task is to comprehend and tell me what it means • Start to talk **out-loud** whatever you are silently talking to yourself.	• Stop at the red dot • Try to describe and explain whatever thought that has come to your mind while reading the previous sentence, as detailed as possible. E.g. something that has come to your mind but you had no time or not able to talk out-loud just now.

- No time limit for your comprehension, take your time to read, to comprehend and to report as much as possible.
- Remember to talk out-loud constantly, for I want to get everything you happen to think of, no matter how irrelevant it may seem.
- I am interested in your thinking behavior and your third language comprehension process, not your final solution or reaction time. Tell me whatever comes to your mind, no matter it is a good or less good idea. *I do not count your wrong attempts, therefore speak them out!*

Instruction to participant:

I would like you to read the texts or sentences in French using think-aloud method. Assume that this is a reading text that you have to understand just like you are assigned by your Prof. in class. I would like you to do it exactly as you do normally when you read the text, the only difference is that you have to talk out-loud what you are thinking in your head, and maybe more about what other thoughts have come to your mind after you see the red dot.

You may use Chinese or English or code mixing whichever you feel more comfortable in saying. **But do not try to translate the language in which you originally thinking in into the language that you decided to use in reporting. Be as natural as possible.** Speak in whatever language you are actually thinking in. Do not be afraid of making mistake or feel not proficient in the language you are speaking.

This is neither a French test nor a reading test. The reason why I ask you to do this is because I would like to learn more about what you think in comprehending the third language, especially how previously learnt languages influence your thoughts. All that you report will be kept confidential.

Training text

Vendredi dernier, j'ai donné un coup de téléphone à Jacques et lui proposé de faire une visite a la ferme de mon oncle. ● Le lendemain matin, nous nous sommes levés de bonne heure. Nous nous sommes mis en route vers sept heures. ●

A l'entrée du village, au pied d'une montagne, nous avons apercu de loin le clocher de l'eglise. ●Notre voiture s'est arretee devant la mairie. Nous en sommes descendus faire un tour sur la place... ●

A notre arrivee pres de la ferme, mon oncle m'a fait signe de la main. ● Je lui ai presente mon ami Jaques. ● Nous avons traverse une belle cour et nous sommes entres dans la maison. ● Ma tante nous a servi un tres bon aperitif. ● Puis nous sommes alles voir les lapins et les poules. ● Ensuite nous avons aide mon oncle a ramasser les oeufs. ●

A midi, on a fait un pique-nique sous un grand arbre. ● Cette fois-ci, mon oncle nous a raconte des aventures de sa jeunesse. ● Apres le dejeuner on s'est promene au bord d'un grand champ de ble. Ah, quel plaisir d'etre en pleine campagne! ●

APPENDIX C Task One: on-line comprehension task in French

Please **comprehend** the following text, using the think aloud method.

请用有声思维法理解下面的短文，注意每句后停顿并回忆你的详细思考过程

Text

Hier soir, M. Lacan est rentrée à la maison à dix-neuf heures. ● Il a bavardé avec sa femme comme chaque jour. ●Puis leurs enfants ont regardé la television. ●Et M. Lacan a dit à sa femme: « je sors un instant. » ● il a pris son manteau et il est sorti. ●Il n'est pas revenu. ●Sa femme a attendu toute la nuit. ●

Sentences

1. Je suis revenu pour trois jours.
2. -Tu n'as pas encore fait tes devoirs ?

   -Non, je n'ai rien écrit. Je n'ai jamais eu tant de difficulté.
3. Il y a deux semaines, j'ai visité ma grand-mère.
4. Vous avez réparé le télécopieur ce matin?
5. Nous avons téléphoné aux clients déjà.
6. On a installé Microsoft Office la semaine dernière.
7. Où as-tu travaillé depuis 2000?
8. Nous ne sommes rentrés qu' à six heures du soir, très contents de notre belle journée.
9. Ce jour-là, elle n'est pas allée au bureau.
10. Tu n'es pas resté à la maison la nuit dernière?
11. Il est déjà parti.
12. Ils ne sont pas descendu de l'avion encore.

APPENDIX D Standard translation of Task One comprehension

Text

Hier soir, M. Lacan est rentrée à la maison à dix-neuf heures. ● Il a bavardé avec sa femme comme chaque jour. ●Puis leurs enfants ont regardé la television. ●Et M. Lacan a dit à sa femme: « je sors un instant. » ● il a pris son manteau et il est sorti. ●Il n'est pas revenu. ●Sa femme a attendu toute la nuit. ●

Reference Translation (provided by a native speaker of French who is an advanced speaker of English with a PhD degree obtained in Ireland, and further checked by Prof. Gerald Nelson, who is a native speaker of English and Professor of Applied English linguistics, an expert in English and French grammar):

Last night, Mr. Lacan returned home (or went back home/ returned to his home/house) at 19 o'clock (or 7pm). He chatted with his wife as usual (or as he did every day). Then their children watched (the) television. And Mr. Lacan said to his wife: "I'm going out for a moment/minute/second"). He took his coat and went out. He didn't come back. His wife waited the whole night (or all night).

Sentences

1. Je suis revenu pour trois jours.

Translation: I have been back for three days. / I came back for three days.

2. -Tu n'as pas encore fait tes devoirs ?

   -Non, je n'ai rien écrit. Je n'ai jamais eu tant de difficulté.

Translation:

-You haven't finished your homework yet?/You still haven't finished your home work?

-No, I haven't written anything. I have never had so much difficulty/trouble. (or No, I didn't write anything. I never had so much difficulty.)

3. Il y a deux semaines, j'ai visité ma grand-mère.

Translation: I visited my grandma two weeks ago.

4. Vous avez réparé le télécopieur ce matin?

Translation: Did you repair the fax machine this morning?

5. Nous avons téléphoné aux clients déjà.

Translation: We have already telephoned the clients.

6. On a installé Microsoft Office la semaine dernière.

Translation: We installed Microsoft office last week.

7. Où as-tu travaillé depuis 2000?

Translation: Where have you worked since 2000? (or Where have you been working since 2000?)

8. Nous ne sommes rentrés qu' à six heures du soir, très contents de notre belle journée.

Translation: We didn't come back until six in the evening, very contented with our beautiful day/We were so pleased we had such a lovely day.

9. Ce jour-là, elle n'est pas allée au bureau.

Translation: She didn't go to the office that day.

10. Tu n'es pas resté à la maison la nuit dernière?

Translation: You didn't stay (at) home last night?

11. Il est déjà parti.

Translation: He has already left /gone.

12. Ils ne sont pas descendu de l'avion encore.

Translation: They haven't got off the plane yet.

APPENDIX E Task two: test on English past and perfect tenses

Subject #:_____

Please choose the right verb form for each sentence, the choices are in bald; please tick one from the two.

Agatha Miller **was born / has been born** on 16 September 1890 in Torquay in southwest England. Better known as Mrs Agatha Christie, she **wrote / has written** altogether 78 mystery novels and 19 plays.

Very few other crime writers **wrote / have written** more books than this, and few **became / have become** so immensely popular.

Ever since she **published / has published** her first novel, The *Mysterious Affair at Styles* in 1920, her books **were never / have never been** out of print. They **were translated / have been translated** all over the world, and, perhaps surprisingly, her sales **actually increased / have actually increased** since she **died / has died** in 1976. For a short time after her death they **fell / have fallen**, so it was perhaps the screen that **revived / has revived** her popularity.

Two immensely successful films **were made / have been made** a few years ago, *Death on the Nile and Murder on the Orient Express*, and these **were followed / have been followed** more recently by television series, which **brought / have brought** two of her most successful detectives, the Belgian Hercule Poirot and the elderly English lady Miss Marple, to millions of viewers.

In 1990, the centenary of her birth her birthplace Torquay **honoured / has honoured** her memory with a special 'mystery festival' – good publicity for the town of course. In 1992 a London theatre **was / has been** able to boast: 'The *Mousetrap*, now in its 40th year, **broke / has broken** all records.'

There is now even a rose that **was named / has been named** after her.

People **enjoyed / have enjoyed** Agatha Christie's story-telling for years, and her popularity currently seems higher than it **ever was / has ever been**. It is not of course the first time that an author **became / has become** more popular in death than life.

Appendix F A sample of the original think-aloud report (participant #1)

Date: 04/11/2009
Venue: Discussion room in the library of Nanhai campus, SCNU
Interviewee: Participant #1 XIA Tianxiao
Interviewer: CAI Jing
Transcriber: CAI Jing
Language Used by the Interviewee: Mixed (Chinese, English and French)

Report in Chinese: original font
Report in English: bald
Report in French: italic
Words activated during first round comprehension: highlighted

Text 1

Xia: Last night, Mr. **Lancan**, at 6 o'clock, arrived [1]at home.

I: So please report more from the beginning. What was your thinking process, for example, what languages did you think of? And did English or Chinese help you understand the sentence?

Xia: Yes, indeed. I know the first two words. I know the Chinese meaning of the first two words, so I translated the individual words into Chinese and piece them together. So it should be "last night". *Rentree* means "come back home". I think this *rentree* looks like an English word, I thought of "**return**". And then I did not think of others…

I: Did you think about tense just now?

Xia: I don't think so. I didn't think of the tense just now.

I: How about "go back home", did you think of English or Chinese?

Xia: I did not think in English. But "at XX hour" looks like English, "**at what what time**".

I: How about this? *dix-neuf*?

Xia: *dix-neuf* I thought of 10 and 9 combined together, but I mistook it for "**six**", I read it wrongly.

I: Do you think this *heur* is close to "**hour**" in English?

Xia: No, I did not think of "**hour**", maybe because I have read French a lot, then now I don't need to associate these simple words with English as I initially did.

I: OK, next sentence.

Xia: I don't know this word. He and his, he and his wife. This is "**everyday**".

I: This means "to chat". So what languages did you think of in the comprehension?

Xia: This one made me think of "**with**", the function is close. *femme* looks like an English word such as "**female**"; I thought of English mostly on the lexical level; But actually the sentence structure here, and also the prepositional phrase looks like English too, "**with sb.**"

I: Next.

Xia: And their children were watching TV.

---

[1] Important Notes: The verbs in the content being comprehended (the highlighted) which were originally in Chinese, do not have any marker on tense because of the lack of temporality in the Chinese language. All the inflections are added by the author for the sake of translation.

I: So again, back to the first word of this sentence, what was your thinking process?
Xia: for *enfant*, I matched it on to the English first, because they looked similar.
I: I am wondering when you are "thinking in Chinese" as you mentioned, did you think of Chinese at the sentence level as a whole, or Chinese meanings of the invidviduals words? For example, did you come up with the Chinese translation of the whole sentence once you finished reading it, or you have the meaning of each word in Chinese and then piece them together?
Xia: My process of comprehension is like this, I first looked at words of course, and I pieced the words which I know the meanings into a sentence. When I first saw a word, I usually match it onto a Chinese meaning.
I: So for exmaple this word *enfant,* you would first think of English, no Chinese?
Xia: When I saw it at the first sight I would think of English， yes.
I: But for the other words, you wouldn't, right?
Xia: But for other words here, my first reaction is in Chinese, for a quicker and better comprehension.
I: Did you think of Chinese only?
Xia: Oh, *regardé la television* looks like English, I thought of English "**watch the television**" first, actually at the same time with the Chinese meaning.
I: All right, next.
Xia: eh, this one, Mr. Lacan said to his wife: "I...", "I have some urgent things to do"?
I: So again, retrospect.
Xia: **and**,
I: So you think of the English "**and**"
Xia: Yes. He, he said to his wife…
I: So this part you think in Chinese?
Xia: Actually…Actually I would think of English sentences in general at the back of my thought, maybe not explicitly, but I know that subconsciously I did think of English. For example, this *(a dit à*) is "**talk to**". But for simple chunks and words, I usually think of Chinese meaning directly rather than going from English to Chinese. That would be time consuming. Oh, and I didn't know this word *sor*.
I: What verb did you guess for this word just now?
Xia: I have no idea…
I: How about this one, *instant*?
Xia: I don't know. But *instant* looks like English**,** that's why I guessed this might mean "I have something urgent to do".
I: but why "urgent"?
Xia: because this is instant, something that needs you to do instantly, so I just guess it might be something urgent.
I: OK next.
Xia: They…they took…
I: Why is it "they"?
Xia: Oh! He took his coat and left.
I: So retrospect now.
Xia: I thought for a long time where the verb is. And then I found that it's *sortir*.
I: And then what did you think of?
Xia: Eh…to understand the word *pris*, I have been thinking in Chinese, not in English. Until I understood this word could I confirm this *manteau* means "coat".
I: So you memorized this word as "coat" not "**coat**" in English?

Xia: Whenever I think of English, it must be the result of formal resemblance. For *manteau*, I didn't match it onto English, because they look different. I thought for sometime what *manteau* means, and then I knew it is coat (in Chinese)
I: How about this? You wouldn't think it means "**take his coat**" in English right?
Xia: Actually I did think of "**take his coat**" as a chunk!
I: But it's after you've already got the Chinese meaning right?
Xia: Well, I guess that English is in my sub-conscious, but my mind would go straight to report the Chinese meaning.
I: How about this, *sortir*?
Xia: For *sorti*, I didn't associate with English, they are not similar.
Xia: And then "he didn't come back". I didn't think of anything for this sentence…
Xia: And then his wife waited a whole night.
I: So this sentence? What were you thinking just now?
Xia: This *toute la nuit*, reminded me of "**all the night**" in English;
I: How about *attendre*?
Xia: I am familiar with the meaning of *attendre*, so there was no English involved in comprehension.
I: Good, next.
Xia: it is three and he hasn't been back yet.
I: Why is it three o'clock?
Xia: *trios jour*…oh! It should be three days. I will be back in three days.
I: "will be"…so what tense is it?
Xia: I didn't pay attention to the tense at first, I just saw *pour*. If I decided to comprehend in Chinese, then I would hardly attend to tense. But if I looked at tense again, it turned out not to be what I thought it should be. When I saw *pour*, I would associate it with the tense in English and the time adverbials such as "**in three days**".
I: Mm…the second sentence.
Xia: you cannot, do this…
I: you don't know this word devoir?
Xia: No.
I: for this sentence, did you think of any English or Chinese?
Xia: *encore*, I would associate with "**encore**" in English, meaning "again". Is it? And I did not think of any English for other words.
I: and next.
Xia: no, you don't read…I didn't read anything? Ecrit means "read" in Chinese?
I: it means to write. Did you think of any English just now?
Xia: I didn't think of "I haven't done…" in English. And then "I never write anything so difficult". I don't know the word *en tant de*.
I: it means "**so much**".
Xia: I cannot find the verb. I have never had…I don't know…I thought it was *ai*.
I: did you think of tense just now?
Xia: Actually I was staying at the stage of basic comprehension of the sentence, so I did not pay much attention to the tense. For the word *jamais*, I thought of "**never**" in English, because Chinese does not have such a good word to match so perfectly. For *difficulté,* I thought of "**difficult**" in English.
I: not "**difficultly**"?
Xia: I would first think of "**difficult**".
I: and next.
Xia: two weeks…I have been visiting my grandma for two weeks. I have visited my grandma for two weeks…it has been two weeks since I visited my grandma.

I: Is there anywhere that English helped you understand the sentence, except from the cognates?
Xia: I thought of the English sentence structure, because in Chinese we do not put the time at the beginning of a sentence. So if I read with the flow, I would naturally think of English.
I: So what exactly did you think of?
Xia: **It has been two weeks since I visited my grandma.**
I: so for the whole sentence you associated with English?
Xia: Yes, as it is very different from Chinese.
I: and this one.
Xia: you, have you prepared…have you prepared your photocopy machine, this morning? No, have you repaired your photocopy machine
I: so, on the lexical level and sentence level, what was your thinking process?
Xia: I first used Chinese to read it and comprehend it, but I found it really awkward. Only in English do we put the time adverbial at the end of a sentence. In Chinese we would directly say the time setting first. So then I would think of the English word order, but only for the latter part of the sentence. The first half of the sentence I still thought of Chinese. Oh, but for some words such as "**repair, the**", and "**telecopy**", they look like English words. But it's just my guess.
I: well, it means fax machine. Next.
Xia: We have, we have called all the… clients.
I: why did you pause for a while for the word "clients"?
Xia: Because I thought of the English word "**client**" first.
I: but why didn't you directly use English to report?
Xia: I really don't know! It's weird. Maybe because from the very beginning I was used to report in Chinese…the power of habit. I thought of a lot of English words actually, "**already**" for déjà, and "**telephone**" is the same as French.
I: so you didn't think of words such as "**we have**…".
Xia: No, I didn't. Next sentence. We have installed…**Microsoft Office**. Last week?
I: So what was your thinking process?
Xia: This looks like "**install**" in English. "We have installed **Microsoft Office**". I did not look for English words for this time adverbial; I never associate it with **last week** in English. They are not a bit alike.
I: And you didn't think of words like "**have**…"?
Xia: No. And I wouldn't associate the pronouns with English either, such as "**I**" and "**we**"; I think they are more fixed in my mind as a memory based chunk, my first reaction would be Chinese, I can just directly got the Chinese meaning.
I: and the 7th sentence.
Xia: you , came here, in 2000, where did you work?
I: So please retrospect again.
Xia: I would think of "**work**" for the word *travaille*, and "**where**" for *Où*. For this word *depuis*, it is close to "**since**" in English.
I: why did you think of "**since**" only in this sentence but not for other time adverbials?
Xia: Maybe it is because I saw "2000" first, which reminded me of time settings with "**since**" in English.
I: and next.
Xia: we didn't, at 6 o'clock, didn't come back at six in the evening. Very…we had a very good day.

I: so what were you thinking just now? For example, when you see the negation, did you think of English? They look quite similar as you said.
Xia: I don't know what *ne...que* means actually but I am sure I would think of English if I knew this structure.
I: how about these parts? Such as *rentree*?
Xia: This chunk I would think of "**six o'clock at night**". For *content* I thought of "happy" in Chinese directly, no English was involved, because I know the Chinese meaning already, and I don't know what it is in English. Oh, I thought of "**very**" for *tres*, but the latter half of the sentence I translated to mainly Chinese in my mind, but "**beautiful day**" I did think of English.
I: ok, next.
Xia: today…that day she didn't, go to her office.
I: so you know what to do next, I don't need to ask again.
Xia: I only thought of "**that day**" in English. I didn't think of English for the rest part.
I: and next.
Xia: you didn't…last night you didn't come…
I: I saw you suddenly jump to look at the end of the sentence, this is interesting…
Xia: yeah, as I wanted to comprehend in Chinese, so I jumped to look first at the time adverbial at the end of the sentence as the word order in English and Chinese is different. So it was just for the matter of reporting the translation to you. *a la maison*…this I associated with English equivalent, and I first thought of "**rest**", and also the Chinese "rest", but I knew it should be "**stay**" in English**, stay at home.**
I: so how do you comprehend this sentence?
Xia: last night? You didn't rest at your house?
I: Ok, next.
Xia: they have already gone.
I: did you think of anything just now?
Xia: Oh, I don't know why I thought of "**party**" in English, but I know it should not be "**party**", ha. Usually I would think of "**already**" whenever I see *déjà*.
I: so the final sentence.
Xia: they, they…eh…they didn't take the plane?
I: where do you think is close to English or Chinese?
Xia: I think this looks like "**descend**", but I seem to have forgot the meaning of this word because of the French word. I was confused…I don't remember what it means. Does it mean "land"? I can't figure out the meaning of this sentence. They haven't landed? I think it means "to land the plane".
I: so you forgot the meaning of **descend**?
Xia: I thought it meant "make the plane land". What does it mean by "did not make the plane land?" I have no idea.
I: for the rest of sentence, did you think of any English besides **descend**?
Xia: No.
I: so next comes the second round comprehension. As you have already comprehended the sentences and got the meaning, now I need you to informally translate the entire sentences into English. You just need to tell me the meaning again, but in English. You do not need to worry, you can start and stop or even correct at any time you like. And, you don't need to pause and report your thinking process to me. Just take your time. I will be around. Speak to the MP3 player would be OK. So are you ready?
Xia: Yes.

I: Now start.
Xia: Last night, Mr. Lancan return to his home at…eh... 19 o'clock. He talk, he had a little chat with his wife everyday. And his kids were watching television. And Mr. Lacan told his wife that he has sth. to do. So he took his coat and left. And he didn't return. So his wife waited all the night. I will be back in three days. You haven't finished your …I don't know this word…again? No I have done nothing of… them. I never do…anything difficult. It has been two weeks since I visited my grandmother. Did…Have you repaired the telecopy this morning? We have already telephoned all the clients. Last week, we have installed Microsoft office. And… Where have you been working since 2000? We didn't return until 6 o' clock at night, and …we had a beautiful day…very happy that we had a beautiful day. That day, she didn't went to her office. Didn't you stay at your house last night? They…haven't left yet…they have…he has already left. They didn't…went off the plane yet.
I: Finished? Ok, thank you very much! We will move on to the next task.

APPENDIX G An example of three levels of coding (participant #1)

Overall Accuracy : -27.5

(Notes: All the codes are in bold. The errors are highlighted.)

Text

Hier soir, M. Lacan est rentrée à la maison à dix-neuf heures. •

- Languages activated:
  - English: return， six, at XX hour
  - Chinese: 昨晚 (= last-night[2])，先生 (Mr)，6 点 (six o'clock)，回到家 (back-home)
  - French: Lacan,
- Other remarks: 认识前两个词， 不会想英文，rentree 像英文 return, 时态没有想，"在几点"跟英语有点像，dix-neuf 想到 10 和 9 搭在一起，不会觉得 heure ，不会想 hour, 因为法语看多了，就不会想英语. (Translation : Because I know the first two words in Chinese, I don't need to associate it with English; for *rentree*, I thought of English "return" **LP**, but I didn't think of the tense; "at XX hour" looks like English **LP**; *dix-neuf* I thought of 10 and 9 combined together, I did not think of "hour". Because I have read French a lot, then now I don't need to associate these simple words with English as I initially did.)
- Second round comprehension (translation)： Last night, Mr. Lancan return -1 **STN (Chi)** to his home at 19 o'clock.

Il a bavardé avec sa femme comme chaque jour. •

- Languages activated:
  - Chinese: 他 (he)，和 1 他的 (with-his), 一天 (everyday)
  - English: with 2
- Other remarks: femme 像英文 famine。只是单词层面的东西。句型也有点像，with，和谁一起. (Translation: This one made me think of "with"; *femme* looks like English word such as "female" **LP**; I thought of English mostly on the lexical level; But actually the sentence structure here **SP** , and also the prepositional phrase looks like English too, "with sb." **LP**)
- Second round comprehension (translation): He had **STP** a little -0.5 chat with his wife everyday. -1 (she does not know the word *bavardé* -1)

Puis leurs enfants ont regardé la television. •

- Languages activated :
  - English: enfant 1， watch the television 1
  - Chinese: 然后他们的小孩 (then-their-children) 2，在看电视 (watch TV) 2

[2] English words in the parentheses are literal translations of the original report for the convenience of the readers of this thesis

- Other remarks: 我是一边看，看到那个单词就想把它拼成句子嘛， 我看到单词第一反应我会把它翻译成中文， 但是 enfant 看到第一眼会觉得像英文，但是其他会第一反应是中文。为了理解。看电视像英文，首先想到英文。(Translation: My process of comprehension is like this, I first looked at words of course, and I pieced the words which I know the meanings into a sentence. When I first saw a word, I usually match it onto a Chinese meaning. But for *enfant*, I matched it on to the English first, because they looked similar **LP**. For other words here, my first reaction is Chinese, for a quicker and better comprehension. Oh, regardé la television looks like English, I thought of English "watch the television" first **LP**.)
- Second round comprehension: and -0.5 his -1 kids were watching -1 **STN (Eng)** television.

Et M. Lacan a dit à sa femme: «je sors un instant.» •

- Languages activated:
  - English: and, talk to 2, instant
  - Chinese: 兰卡先生 (Mr. Lacan)，他就对他的夫人说 1 (He-say to-his wife)，我 (I)，我有急事 (I-have-some urgent things)
- Other remarks: 其实会隐隐约约想到英文。不过这种比较简单的就会直接想到中文。Instant 像英文. (Translation: Actually I would think of English sentences in general **SP** at the back of my thought, maybe not explicitly, but I know that subconsciously I did think of English, for example, this *(a dit à)* is "talk to" **LP**. But for simple sentences like this, I usually think of Chinese meaning directly rather than going from English to Chinese; that would be time consuming. *Instant* looks like English **LP.**
- Second round comprehension: and Lacan told his wife that he has -1 **ProE** sth. to do. (She does not know the word *sor* -1)

Il a pris son manteau et il est sorti. •

- Languages activated:
  - Chinese: 他们 (They)，拿上了他们的 (take-their)，他拿上了他的 (take-his)， 外套 (coat)，然后就离开了 (and then- leave)
  - English: take his coat 2
- Other remarks: (我想了很久动词是什么，然后发现是 sortir， pris 在想中文，没有想英文。然后想到中文才可以确定一下这个是不是外套。Manteau 不会用英文记。如果我要用英文记只能是因为他们长得像。还是会想到 take his coat. 好像潜意识是在想英文吧。不过脑袋会直接就翻译成中文意思。这个出去就不会想，因为这个不太像。(Translation: I thought for a long time where the verb is. And then I found that it's *sortir*; to understand the word *pris,* I have been thinking in Chinese, not in English. I thought for sometime what *manteau* means, and then I knew it is coat (in Chinese); for *manteau*, I didn't match it onto English, because they look different. Whenever I think of English, it must be the result of formal resemblance. Mm, but I did think of "take his coat" **LP** as a chunk. Well, I guess that English is in my sub-conscious, but my mind would go straight to report the Chinese meaning; for *sorti*, I didn't associate with English, they are not similar.)
- Second round comprehension: So he took **STP** his coat and left **STP**.

Il n'est pas revenu. ●

- Languages activated:
  - Chinese: 他没有回来。(he- no-return)
- Other remarks: /
- Second round comprehension: And he didn't return. **STP**

Sa femme a attendu toute la nuit. ●

- Languages activated:
  - Chinese: 他的夫人 (his wife)，等了整晚 (wait-all night)
  - English: all the night
- Other remarks: toute la nuit想到 all the night， 因为可能attend有点熟，就没有想英语. (Translation: for the word *toute la nuit,* I thought of "all the night" in English **LN**; I am familiar with the meaning of *attendre*, so there was no English involved in comprehension.)
- Second round comprehension: so his wife waited **STP** all the -1 night.

Sentences

1. **Je suis revenu pour trois jours.**

- Languages activated:
  - English: in three days 2
  - Chinese: 我三点钟会回来 (I-will- be back- at three)。三天 1 会回来 (in three days -will be back)。
- Other remarks: 关于时态，我直接往后看了。看到 pour, 就没有看它的时态。如果从中文理解的话，我基本上不会去考虑时态。然后看时态的时候发现不是这样子的。我会想到 pour, 会联想到英语里的时态表达，就是说，in three days 之类的那些。(Translation: I didn't pay attention to the tense at first, I just saw *pour*. If I decided to comprehend in Chinese, then I would hardly attend to tense. But then I suddenly thought of tense when I saw *pour*, but it came to me as "in three days" **LP**.)
- Second round comprehension: I will be -1 back in -1**ProF** three days.

2. **-Tu n'as pas encore fait tes devoirs ?**

- Languages activated:
  - Chinese: 你不能 (you-cannot), 带(bring), 做一些什么吗 (do-something)?
  - English: encore
- Other remarks: Encore 会想到 encore, 重复， 再的意思吧？其他部分都没有. (Translation: I would think of "encore" in English when I see *encore* **LN**, meaning "again". Is it? And I did not think of any English for other words.)

- Second round comprehension: You haven't finished **STP** your X again -1? (She does not know the word *devoir* -1)

-Non, je n'ai rien écrit. Je n'ai jamais eu tant de difficulté.

- -Languages activated:
  - Chinese: 不 (no)， 我 (I)，再也不读了(never-read-anymore)。 我什么也没读 (I-read-nothing)。我从来都不 (I-never)， 写 (write)， 什么很难 1 的东西 (anything-difficult)， 从来没有 (never) 1
  - English: never 2, difficult 2
- Other remarks: ecrit 是"读"。不会想到 I haven't done.. en tant de 不会。 动词找不到。 以为动词是 ai。 还停留在句子意思理解的阶段，不会去想太多时态。 jamais 这个会想到 never. 因为中文没有这么直接的对应。difficulte 这个会想到 difficult. (Translation: Ecrit means "read" in Chinese. I didn't think of "I haven't done…" in English. I don't know the word *en tant de*. I could not find the verb. I thought it was *ai*. Actually I was staying at the stage of basic comprehension of the sentence, so I did not pay much attention to the tense. For the word *jamais*, I thought of "never" **LP**, because Chinese does not have such a good word to match. For *difficulté*, I thought of "difficult" in English **LP**.)
- Second round comprehension: No I have done -1 **STP** nothing of them -0.5. I never do **STN (Chi)** anything difficult -2 (for tense and meaning).

3. **Il y a deux semaines, j'ai visite ma grand-mère.**

- -Languages activated:
  - English: It has been two weeks since I visited my grandmother 1
  - Chinese: 两个星期 (two weeks)，我已经 (I-already)，来看我奶奶两个星期了 (visited-already- my grandma- for two weeks)。距离我看奶奶已经两个星期了 (I -visit- my grandma-already-two weeks)。2
- Other remarks: 会想到英语的句型。因为中文不会把时间放到前面说，所以这样读的话，我就会想到英文的句型。基本这个句子还是会想英语的。因为它跟中文很不同。(Translation: I thought of the English sentence structure **SP**, because in Chinese we do not put the time at the beginning of a sentence. So if I read with the flow, I would naturally think of English. So for this sentence I mostly think of English, as it is very different from Chinese. It has been two weeks since I visited my grandmother.)
- Second round comprehension: It has been -1 **ProF** two weeks since I visited **STP** my grandmother.

4. **Vous avez réparé le télécopieur ce matin?**

- Languages activated:
  - English: repair 2
  - Chinese: 准备了你的 (prepare-your)，复印机吗 (photocopy machine)？今天早上 (this morning)。 修了你的复印机吗 (repare- already-your photocopy machine)？ 1
- Other remarks: 这我要用中文读之后才会觉得最后这个很不通， 因为只有在英文里会把时间放到后面。中文会直接说今天早上。所以翻译过来之后会想到英文。前面部分不会想到英文，只会想到中文。 哦， repair 会，telecopieur

会，后者不认识，但是看它样子觉得像 telecopy，猜的。(Translation: I first used Chinese to read it and comprehend it, but I found it really awkward, only in English do we put the time adverbial at the end of a sentence. In Chinese we would directly present the time setting first. So then I would think of the English word order **SP**, but only for the latter part of the sentence. The first half of the sentence I still thought of Chinese. Oh, but for some words such as "repair" **LP**, and "telecopy" **LP**, they look like English words. But it's just my guess.)

- Second round comprehension: Have you repaired -1 **ITN** the telecopy -1 this morning?

5. **Nous avons téléphoné aux clients déjà.**

- Languages activated:
  - Chinese: 我们已经 2 打 2 给全部的 (we –already- call- all)，顾客了(clients)
  - English： client 1， already 1， telephone 1
- Other remarks: 会先想到英语的 client， deja 这个会想到 already，会想到 telephone. (Translations: I thought of a lot of English words, such as "client" **LP** for *client*, "already" **LP** for *déjà*, and "telephone" **LP** is the same as French.)
- Second round comprehension: We have already telephoned **STP** all the **LN**-1 clients.

6. **On a installé Microsoft Office la semaine dernière.**

- Languages activated:
  - Chinese: 我们装了 2 (we -install), 上个星期 (last week)?
  - English：install 1，Microsoft office 1
- Other remarks: 这个很像 install 啊， 装了 Microsoft office 这样子， 这个时间状语没有想。英文里的 I， we 都不会去想， 看到就直接反映中文意思了。This looks like "install" in English **LP**. "we have installed (in Chinese) Microsoft Office **LP**", this time adverbial I did not look for English words. And I wouldn't associate the pronouns with English either, such as "I" and "we"; I just directly got the Chinese meaning.)
- Second round comprehension: Last week, we have installed **ITN** -1 Microsoft office.

7. **Où as-tu travaillé depuis 2000?**

- Languages activated:
  - Chinese: 你两千年来 (you- since 2000)， 在哪里 1 工作 1 (where- work)?
  - English: work 2, where 2, since 2
- Other remarks: travaille 会想到 work, 这个会想到 where, 这个会想 since, 可能是因为看到是 2000，就觉得像 since 的意思。 (Translation: I would think of "work" **LP** for the word *travaille*, and "where" **LP** for *Où*. For this *depuis*, it is close to "since" **LP** in English. Maybe it is because I first saw 2000, which reminded me of "since".)
- Second round comprehension: Where have you been working **STP** since 2000?

8. **Nous ne sommes rentrés qu' à six heures du soir, très contents de notre belle journée.**

- -Languages activated:
  - Chinese: 我们没有在 6 点 1 (we- not- at 6)， 晚上 6 点回来 (come back- at 6- in the evening)， 非常 1 (very)， 我们玩了非常好 1 的一天 (we- have- a very good- day)
  - English: six o'clock at night 2, very 2, beautiful day 2
- Other remarks: ne…que 不知道什么意思。这部分会想到 six o'clock at night. 会直接想到高兴不会想 contented，因为知道它什么意思。 Tres 会想 very，会想到 beautiful day. (Translation: I don't know what *ne…que* -1 means. This part I would think of "six o'clock at night" **LP**. For *content* I would think of "happy" in Chinese directly, no English, because I don't know what it is in English. I thought of "very" **LP** for *tres*, and also "beautiful day" **LP**.
- Second round comprehension: We didn't return **STP** until 6 o' clock at night -0.5, very happy that we had **STP** a beautiful day.

9. Ce jour-là, elle n'est pas allée au bureau.

- Languages activated:
  - Chinese: 那天 2 她没有去 (that day- she- not- go)， 她的办公室 (her office)
  - English: that day 1
- Other remarks: 这个会想到 that day, 后面就没有想法。(Translation: I only thought of "that day" **LP** in English. I didn't think of English for the rest part.)
- Second round comprehension: That day, she didn't went -2 **STP & ProE** to her office.

10. Tu n'es pas resté à la maison la nuit dernière?

- Languages activated:
  - English: stay, rest 1
  - Chinese: 你不 (you-not), 你昨天晚上 (you-last night), 休息 (rest), 你昨晚没有在家休息吗 (you-not-rest-at home-last night) ？
- Other remarks: 因为想翻译成中文，就先跳去看后面的时间状语。想到 rest 之后，想到中文的 "休息"，但是知道是英语 stay 的意思。(Translation: because I wanted to comprehend in Chinese, so I jumped to look first at the time adverbial at the end of the sentence as the word order in English and Chinese is different **SP**. I thought of "rest", and also the Chinese "rest", but I knew it should be "stay" in English **LP**.)
- Second round comprehension: Didn't you stay **STP** at your house last night?

11. Il est déjà parti.

- Languages activated:
  - Chinese: 他们已经 2 走了 (they-already-go)
  - English: party, already 1
- Other remarks: 想到 party 耶，不过知道不是 party. 看到 *déjà* 一般会想到

already。 (Translation: Oh, I don't know why I thought of "party" in English, but I know it should not be "party", ha. Usually I would think of "already" **LP** whenever I see *déjà*.)

- Second round comprehension: He has already left **STP**.

12. Ils ne sont pas descendu de l'avion encore.

- Languages activated:
  - English: descend,
  - Chinese: 他们 (they)，没有 (no)，乘飞机吗 (take the plane)?
- Other remarks: 会觉得像 descend， 但是我好像会被法语弄到忘记英语的意思了。我就在很疑惑啊。不记得这个词什么意思了。是降落吧？不明白这个句子什么意思。我会想到是"使飞机降落"的意思。什么叫做"又没有使飞机降落"？ (I think this looks like "descend" **LP**, but I seem to have forgot the English meaning。I was confused…I don't remember what it means. Is it "land"? I can't figure out the meaning of this sentence. I think it means "to land the plane". What does it mean by "did not make the plane land?" I have no idea.)
- Second round comprehension: They didn't went **STN (Eng) & ProE** -2.5 off the plane yet.

Task Three: Follow-up Interview

I: What do you think is the relationship between the passé composé and the English tenses? Which is the corresponding English tense or tenses?
Xia: I think is the simple past.
I: Ok, but let's look at here, sentence 1, why did you use a future tense?
Xia: Oh, I didn't pay attention to the tense just now. I just started to do it…therefore…
I: How about now? What do you think the tense should be?
Xia: I came back three days ago. **I returned three days ago.**
I: Why not "**I have returned for three days**"?
Xia: Oh, yeah…it should be "**I have**"….**Noticing of error 1**
I: Well, you don't need to follow me. Actually I just want to know about what tense do you think passé composé should be in English. Do you think it should always be simple past, or it has other possibilities such as present perfect?
Xia: I guess… it may have some other possibilities.
I: Ok. Let's look at this sentence (Sentence 2) then. You said "**do**" in the second round translation, do you think it is present tense?
Xia: Eh…I said "**never**", "**never do**". Maybe because I feel that "**never**" should always go with a present tense…But now I feel that it should be "**I have never had so much difficulty**" **Noticing of error 2**
I: How about this one (sentence 4)?
Xia: **Have you repaired**…
I: Don't you think it looks more like simple past tense? See the time adverbial? ("this morning")
Xia: Eh...this is an interrogative sentence, like "have you repaired the XXX la?", asking whether you have finished doing something or not, it directly reminded me of the English saying "**have you**…", so I ignored the time adverbial…
I: I am asking you this is because for the other sentences of the same structure, you knew that it should be the simple past, but for these two (sentence 4 and 6), you suddenly changed to the present perfect when it should not be. I want to know how you considered these different. So it means that you still think that passé composé can be both present perfect and simple past tense in English right?
Xia: Yeah...but only sometimes.
I: Ok, I want to have a double check here. For the first sentence, it is because you didn't pay attention. For sentence 4 and 6, because of the common structure in English is so strong that you even ignore the time adverbial at the end?
Xia: Yes.

APPENDIX H Raw data of total transfer in tense and aspect

Participants	Total cases of transfer	Source of transfer		Transfer in tense and aspect						Other types of transfer			Nature of transfer		
		Eng	Chi	Negative Item transfer (ITN)	System transfer (ST)				total TNs	Lexical (L)		Syntactic (S)	Positive	Negative	Unclear
					Positive (STP)	Negative (STN)				Positive (LP)	Negative (LN)				
						Chi	Eng	total STNs							
#1	58	56	2	2	15	2	2	4	6	29	3	5	49	9	/
#2	51	47	4	2	12	4	3	7	9	24	6	0	36	15	/
#3	50	45	5	1	15	5	0	5	6	24	3	2	41	9	/
#4	38	37	1	2	16	1	0	1	3	14	4	1	31	7	/
#5	54	49	5	2	11	5	3	8	10	21	**9**	3	35	19	/
#6	70	69	1	1	17	1	1	2	3	39	6	5	61	9	/
#7	49	47	2	2	16	2	1	3	5	21	4	3	40	9	/
#8	51	49	2	2	11	2	4	6	8	25	6	1	37	14	/
#9	70	66	4	**4**	12	4	0	4	8	39	6	5	56	14	2
#10	52	47	5	2	11	5	4	9	11	20	8	2	33	19	/
#11	43	42	1	2	13	1	4	5	7	21	2	0	34	9	/
#12	50	47	3	3	14	3	2	5	8	24	2	2	40	10	/
#13	48	47	1	2	17	1	1	2	4	23	2	2	42	6	1
#14	88	87	1	2	16	1	1	2	4	46	8	14	76	12	/
#15	48	48	0	2	16	**0**	4	4	6	19	4	3	38	10	1
#16	66	64	2	**0**	19	2	**0**	2	2	32	4	9	60	6	/
#17	93	93	0	**0**	**22**	**0**	**0**	0	0	47	5	**19**	88	5	/
#18	75	71	4	2	14	4	1	5	7	43	**9**	2	59	16	1
#19	76	72	4	2	11	4	3	7	9	47	7	2	60	16	/
#20	85	70	15	0	6	**15**	2	17	17	**55**	6	1	62	23	/
Total	1216	1154	62	35	284	62	36	98	133	614	104	81	979	237	5

APPENDIX I Raw data of overall accuracy and number of errors across 20 participants

Participant	**Overall accuracy**	**Error in tense and aspect before interview**				**Error in tense and aspect after the interview**	**Rate of correction/noticing of errors**
		due to negative transfer	*due to lack of proficiency in English (ProE)*	*due to lack of proficiency in French time adverbial (ProF)*	*Total*		
#1	-27.5	6	3	2	11	9	18%
#2	-40.5	9	3	1	13	10	17%
#3	-25	6	1	2	9	4	50%
#4	-27	3	2	**6**	11	8	27%
#5	-33	10	2	1	13	9	31%
#6	**-42**	3	4	3	10	6	33%
#7	-30.5	6	**6**	1	13	8	38%
#8	-29.5	8	1	2	11	11	0%
#9	-25.5	8	5	0	13	10	17%
#10	-39.5	11	5	2	18	14	18%
#11	-37.5	7	3	3	13	10	23%
#12	-37.5	8	3	3	14	9	36%
#13	-22.5	4	2	2	8	5	38%
#14	-26.5	4	1	3	8	4	43%
#15	-28	6	0	1	7	4	57%
#16	-17.5	2	0	2	4	2	50%
#17	-17.5	0	1	1	2	2	0%
#18	-31	7	2	1	10	6	40%
#19	-38.5	9	5	2	16	12	25%
#20	-40	**17**	2	1	**20**	4	80%

APPENDIX J Analysis of reports on each verb in second round comprehension from the interviews of twenty participants

Text

V1 : Hier soir, M. Lacan est rentrée à la maison à dix-neuf heures.
Standard translation: Last night, Mr. Lacan returned/ came back home at 7 p.m.—no aspect past

Tenses in translations from 20 participants	Frequency
1. no aspect past (tense)	13
2. no aspect present	5
3. perfect aspect present	1
4. no verb	1

For the first sentence in the text, 13 participants got the right association between French PC and English tenses. However, we can still see the influence from Chinese in 6 participants' comprehension as they have no past tense marker on verbs (no aspect present and having no verb). One wrong system transfer is identified for one participant (#19), who believes that PC, no matter what auxiliary verb it has, is equivalent to prefect aspect present tense in English.

V2 : Il a bavardé avec sa femme comme chaque jour.
Standard translation: he talked to (/chatted with) his wife as usual (/as he did everyday). –no aspect past

Tenses in translations from 20 participants	Frequency
1. no aspect past	9
2. no aspect present	6
3. progressive perfect present	2
4. perfect aspect past	1
5. perfect aspect present	1
6. present (indicating future)	1

For the second sentence in the text, a much lower accuracy is observed for the association between French PC and English tenses. Less than half the participants think that in this sentence, the PC verb is equivalent to no aspect past tense. In the follow-up interview, some remarked that this verb sounds more like they are "doing" it (the action is still in process) instead of they "did" it that day (the action is completed), which means that this verb is atelic (with no natural inherent endpoint) in their mind. Influence from Chinese is still very obvious for this sentence as there are 6 cases of no aspect present tense used. Another reason for not making the past tense besides the influence from Chinese is the time adverbial in this sentence, which causes problems in understanding. The time adverbial (comme chaque jour) means "as usual' in English, but literally, its form looks like "as everyday". If the learner is not familiar with the word "comme" (as), he/she may easily have the wrong guessing of the whole adverbial meaning simply "everyday". Participant #12 remarked that whenever they see a time adverbial like "everyday", or words close to "usually", they would think that this is an action done very often by the speaker, then no doubt they should be using present tense only, regardless of the fact that they are having doubts on why a past tense form in French can have a present equivalence in English. For the participants who associate

perfect aspect present tense with French PC, it is because of item transfer, as remarked by participant #9 as "the first impression". Because it is hard for them not to equate the word "avoir" (here "a" is the third person singular form of "avoir", meaning "have" in Enlgish) with "have" and in turn think of the present perfect tense in English.

V3 : Puis leurs enfants ont regardé la television.
Standard translation: Then their children watched (the) TV. –no aspect past

Tenses in translations from 20 participants	Frequency
1. no aspect past	7
2. progressive past	5
3. progressive present	4
4. perfect progressive present	1
5. perfect present	1
6. present (indicating future)	1
7. no aspect present	1

The correct associations between this sentence of French PC and English tenses are even fewer, only 7 out of 20 participants. We can see very clearly that progressive aspect (frequency of 9) is the one they prefer to associate with French PC for the verb "watch". But a lot of them have realized the mistake and correct it in the follow-up interview (participant #3, #11, #12, #18, #19, #20). Another reason apart from the "feeling for activity that lasts for a while" (as mentioned by #13) is the misunderstanding of the conjunction "puis", some mistook it as the preposition "during", which indicates an action that is happening for some period of time. Two of them mistook "ont" (have) for "sont" (are), which gives them more reason to associate with the progressive "are/were doing". Still some of them are superficially making equivalence between "ont" ("avoir") and the English "have", which means the perfect aspect.

V4 : Et M. Lacan a dit à sa femme:
Standard translation: And Mr. Lacan said to (/told) his wife:.—no aspect past

Tenses in translations from 20 participants	Frequency
1. no aspect past	18
2. no aspect present	2

This is the only counter example of PC with aux. « avoir » equivalent to simple past having high accuracy. This is because in the English expression, the participants are familiar with the "saying" "he told" and "he said… ". Verbs meaning "speaking" appear a lot in the past tense discourse in English, while seldom does perfect aspect associate with these verbs. Another reason may be that the irregular past tense forms are more ready to be produced than regular ones. The irregular verbs are memorized as chunks in their mind, they do not need further processing such as adding "ed" (as mentioned by participant #18 in the follow-up interview).

V5 : «je sors un instant.» Standard translation: "I am going out for a moment"-- present progressive		
Tenses in translations from 20 participants		Frequency
1. no aspect present (indicating future): I will…		10
2. no aspect present	I want to… I need to… I have to… I go…	7
3. no aspect past		2
4. present progressive--I am going out		1

However, only one produces the correct translation for the second verb in the same sentence. 7 of them equate "sors" as no aspect present tense in the form of "I want to/I have to" in English. This shows inappropriate translation from French to English due to their lack of English proficiency. « sors » in French is indeed a present tense. But in the English context, it is not correct to use present tense to express the action to be done in a minute. It should be expressed in the form of present progressive—"I am going out…", but this progressive aspect is special in the sense that it indicates the action is being done or to be taken in a very short time instead of indicating continuous actions. It is also different from other forms of present tense indicating future actions (e.g. the first category with 10 frequencies) such as "will go out" or "is going to go out".

V6 : Il a pris son manteau Standard translation: He put on his coat –no aspect past	
Tenses in translations from 20 participants	Frequency
1. no aspect past	13
2. no aspect present	7

V7 : et il est sorti. Standard translation: and he went out (/left). –no aspect past	
Tenses in translations from 20 participants	Frequency
1. no aspect past	15
2. no aspect present	5

In the same sentence, the first verb (V6) has higher accuracy than the second (V7), proving that PC with aux. « avoir » = simple past is more difficult to acquire than PC with aux. « etre » =simple past. Still, quite a number of them do not mark past tense as they fail to pay attention (as mentioned by participant #3, #9, #19, #20), for which we attribute to the influence from the Chinese temporal system.

V8 : Il n'est pas revenu. Standard translation: He did not come back (/return).—no aspect past	
Tenses in translations from 20 participants	Frequency
1. no aspect past	18
2. no aspect present	1
3. perfect aspect past	1

For this sentence, most of them make correct associations between the French PC and English no aspect past tense. The reason is that they are familiar with the structure « Il est + past participle » meaning "he didn't do sth." However, one interesting case is that Participant #10 chooses to equate English perfect aspect past tense with this sentence of French PC. The reason for such association is pretty complicated, he said that: "I think PC is a past tense in French, but I don't think I can say "didn't come back", "because it means 'hai mei hui lai' (not come back yet)".

Sometimes they would like to use the Chinese meaning to guess the equivalent tense in English. For example they add "hai" (still) during their comprehension of meaning in Chinese, when they have to think about the form of the tense, they recall the "hai" which indicates a grammatical aspect of "sth. is being done, but not done yet", close to "yet" or "still" in English, then they deliberately force themselves into having this feeling of "perfectiveness" in their mind.

V9 : Sa femme a attendu toute la nuit.
Standard translation: His wife waited for a whole night. --no aspect past

Tenses in translations from 20 participants	Frequency
1. no aspect past	8
2. no aspect present	5
3. perfect progressive present	3
4. perfect present	2
5. perfect progressive past	1
6. progressive past	1

For this sentence, the associations with different tenses in English are evenly distributed. Even though no aspect past tense, the correct one, has the highest frequency of choice, the accuracy is still lower than 50%. The association of no aspect present tense is also quite high, 5 cases. The reason for relating no aspect present tense with PC, as clearly shown in the previous ones, is the influence from Chinese. This sentence is the farthest from the time adverbial "hier soir" (last night), therefore it is very likely that the participants have already forgotten about the time setting for the event. As for progressive aspect, there are in total 5 cases, and four of them are perfect progressive. For those who use perfect progressive present tense, obviously they are overwhelmed with the continuity but have forgotten the time setting, which is the past (something that did not last until present). Even more complicated, for the one who uses perfect progressive past (#8), she is aware that PC is a tense related to events happened in the past, therefore, when she was about to use perfect progressive present, she changed the tense to past. This demonstrates her lack of understanding in perfect progressive past tense in English. Her process of thinking is much more complicated than we previously expected as follows:

1. This is a past tense in French.
2. "toute la nuit" (the whole night), it should be progressive—waiting for a whole night
3. "a": have—has been waiting for a whole night
4. Reflecting back to point 1, it should be "had been waiting for a whole night".

The following part is ordered according to the degree of difficulty in acquisition. According to CAH, there are four different types of PC:

Theoretically speaking, the easiest type is type one: PC with aux « avoir » =perfect aspect present tense. This is the closest to "have done" in English, literally and grammatically.

The medium difficult ones should be Type Two: PC with aux. « etre »= no aspect past tense) and Type Three: PC with aux « etre » = perfect aspect present tense, as in English we do not need a copula verb functioning as an auxiliary verb before the main verb. So students may associate "etre" with the English aux. verb "have" in the present perfect tense, or simply equate the whole part (etre +pp.) with a main verb of past tense form alone. As for the negation, it is easier to map "etre" with "didn't"/ "haven't" in English.

The most difficult should be Type four: PC with aux « avoir » = no aspect past tense), which is similar to the English perfect present tense in form, but different in the actual meaning.

Sentences

- **TYPE ONE: Passe compose with aux « avoir » =perfect aspect present tense**

V10 : Tu n'as pas encore fait tes devoirs ?
Standard translation: Haven't you done your homework yet?-- perfect aspect present tense

Tenses in translations from 20 participants	Frequency
1. perfect present	17
2. no aspect past	2
3. present tense with no aux verb (typical of one student-- I still not do sth.	1

Even though this type is the easiest one to acquire, there are still three of them who did not make the right association. They (Participant #4, #10, #20) said in the interview that they didn't know what they were thinking back then, and they were willing to change it to present perfect tense. But one of them (#4) added that she was not sure about what "encore" really means so that she was unable to tell very clearly what tense it was.

V11 : Non, je n'ai rien écrit.
Standard translation: Standard translation: No, I haven't written anything./ No, I didn't write anything.-- perfect aspect present tense or no aspect past tense.

Tenses in translations from 20 participants		Frequency
1. perfect present		11
2. no aspect past		5
3. incomplete structure	No, not yet (P#2) No, didn't yet. (P#7) No, I never written. (P#9) I still not start to (P#20)	4

Most of them got the right association between French PC in this sentence and English tenses. Interestingly however, I found some incomplete structures in the four participants' translation which I am not able to tell what tenses they are referring to. For participant #7 and #9, they were referring to simple past and present perfect respectively, but their proficiency of English hindered them to give a complete structure. For P#2, she knows which tense to use as she later told me in the interview that she was intended to use simple past tense, and strictly speaking, this incomplete structure is still acceptable in English. As for P#20, she is seriously influenced by the temporal system in Chinese, and typically she does not pay attention to tense and she often produces English equivalents without a main verb. This will be discussed in detail in the next section of case studies. Surprisingly, when I asked the five students who choose to use no aspect past tense (which is also a correct association) why they think so, they responded in a confession tone that they believe they were wrong as they "did not pay attention to the context", and they would like to correct it and change to present perfect tense.

V12 : Je n'ai jamais eu tant de difficulté.
I have never had so much difficulty./ I never had so much difficulty. -- perfect aspect present tense or no aspect past tense.

Tenses in translations from 20 participants	Frequency
1. no aspect present	8
2. no aspect past	6
3. perfect present	**6**

For the second verb, very strangely, a lot of them did not preserve the same tense as in the first verb. Some said that it is because they "wanted to describe the situation, to tell the objective truth" (P#4,) they "felt the flow of the conversation" (P#7), therefore they do not want to be "faithful" (P#7) to the original tense and they "tried to paraphrase instead if giving literal translation" (P#7, #11). However, still some say that this sentence is too difficult to understand so they simply guess from the context or just make up something that may fit in (P#10, #13, #15). Because of this processing load of meaning, they were torn away from thinking about the form of tense (P#18, #20).

V13 : Nous avons téléphoné aux clients déjà.
Standard translation: We have called/telephoned the clients already.-- perfect aspect present tense

Tenses in translations from 20 participants	Frequency
1. perfect present	20

This sentence has a direct match with the English equivalent word by word, so all the participants got it right, even though we are not able to tell whether this is an item transfer from English to French, or part of the correct system transfer. But from the data we now have, for most of the students, it is very likely to be the former situation for this particular sentence as only one of them (P#17) are able to possess a totally positive metalinguistic awareness of the crosslinguistic similarity and differences between the French PC and English (which means that they can always clearly distinguish when should use the English present perfect, and when should use simple past for the French PC).

V14 : Ou as-tu travaillé depuis 2000?
Standard translation: Where have you worked (/where have you been working) since the year 2000?-- perfect aspect present tense/perfect progressive present

Tenses in translations from 20 participants	Frequency
1. no aspect past	7
2. perfect progressive present	6
3. Perfect present	4
4. no aspect present	2
5. progressive past	1

Only half of the participants make the correct association. This low accuracy is because of the inaccurate recall of the meaning of the prep. "depuis" in the time adverbial. P#4 said that it is "during", therefore a simple past tense should be used. But for P#6, he believes that "during" means that something was happening, therefore a progressive past should be the right tense. P#8 makes the similar judgment with P#4 but she mistakes "depuis" (since) for "in", which gives her more reason to believe that it should be simple past tense. After she was told that it actually means "since" rather than "in", she immediately replied that "it should be 'where have you worked…'". Because of all this misunderstanding of time adverbials directly resulting in wrong association between English tense and French PC, I thus decided to add one category of "ProF" especially referring to this phenomenon which cannot be attributed to negative transfer. A special case is P#16, who in the very beginning chose to say "where have you been working since 2000?" and later changed to "where did you work after 2000" as she is not sure of the meaning for "depuis". She further remarked that if it means "after", then it should be "Where did you work after..", but if it means "since," it should be "where have you…" then finally she revised it and said that both are OK. We can see that she has gone through a very complicated thinking process.

- **TYPE TWO : Passe compose with aux « etre »= no aspect past tense**

V15 : Nous ne sommes rentrés qu' à six heures du soir,
Standard translation: We didn't come back until six in the evening,-- no aspect past tense

Tenses in translations from 20 participants	Frequency
1. no aspect past	15
2. Perfect present	3
3. no aspect present	1
4. perfect past	1

This sentence shows quite high accuracy in the comprehension of French PC. For the participants who relate with perfect present tense, in the follow-up interview, two of them (P#11, #19) gave the reason: it is because "there is the preposition "until", and they were taught that whenever they saw "until" with a specific time, they had to use present perfect tense, as it shows "continuous action carried out for a period of time in the past and ended". Again, for the one who finally chose to use perfect past tense has gone through a complicated thinking process as follows (reported by #15 in the follow-up interview):

1. PC with aux. etre +pp. means "have/has been" in English.
2. "du soir" means "last night", it is already a past time
3. "until six o'clock" means that the event happened before the past time "last night", therefore it is an event in the past of past, I should use past perfect tense

V16 : très contents de notre belle journée.
Standard translation: very happy that we had a good day. -- no aspect past tense

Tenses in translations from 20 participants	Frequency
1. no aspect past	4
2. no aspect present	14
3. N/A (using non-finite subordinate clause)	2

The second verb having much lower accuracy (only 20%) than the first verb again shows that when the auxiliary verb is far away, the learner forgot to pay attention to the tense as a lot of them admitted it in the follow-up interview. But one of them argued that she used present tense for the second verb was simply because she wanted to express some objective truth or status of mind right now instead of describing events happen in the past. Nevertheless, they lack a contextual feeling about tense, or we can say they lack the temporal idea, problem attributed to the influence from Chinese.

V17 : Ce jour-là, elle n'est pas allée au bureau.
Standard translation: She didn't go to the office that day. -- no aspect past tense

Tenses in translations from 20 participants	Frequency
1. no aspect past	20

This is one of the only two sentences that have 100% accuracy in association between French PC and English tenses. However, as we mentioned earlier, these are their correct *attempts* mapping French PC with English tense, which doe not guarantee correct production in form. As there are five cases of double marking (e.g. didn't went/didn't came) which I attributed to the lack of proficiency in English.

V18 : Tu n'es pas resté à la maison la nuit dernière?
Standard translation: You didn't stay at home last night? --no aspect past tense

Tenses in translations from 20 participants	Frequency
1. no aspect past	19
2. Perfect present	1

This sentence has the second highest accuracy. For the better accuracy in the above three sentences, a possible reason may be practice effect. This is towards the end of the exercises. They seem to become aware that they all belong to the tense of PC. (as mentioned in P#19, # 20's interview). Nevertheless, this type generally exerts a very high accuracy among all types, showing that this type is easier to acquire than the other ones.

- **TYPE THREE: Passe compose with aux « etre » = perfect aspect present tense**

V19: Je suis revenu pour trois jours.
Standard translation: I have been back for three days./ I came back for three days.
--perfect aspect present tense

Tenses in translations from 20 participants		Frequency
1. perfect present	I have been back for...	**6**
	I have returned for...	**4**
2. no aspect past	Returned...ago	3
	Came back for...	2
1. present (indicating future)		4
3. present—I am going to...		1

Just about half of the participants got it right. However, one thing to be noted is that, as mentioned in one of the previous sentences, the correct association or assumption between French PC and English tenses does not mean a 100% correct form in production. There may be incorrect production because of the lack of English proficiency. In this sentence, four of the participants (#19, #12, #9, #17) gave a translation of "I have returned in three days" which is not an appropriate expression in English.

But most of the incorrect association is due to the misunderstanding of the prep. « pour » as part of the time adverbial. In the follow-up interview, a lot of them recalled their thinking process in detail. P#13 and P#20 their first impression for "pour" is 'in" or "after", therefore they did not hesitate but chose to use the present tense indicating future. Some of them are not sure whether it should be "in" or "for", they first supposed that it should be "for", but then they convinced themselves that it shouldn't be as it is not right to say 'I have returned for three days", because "return" is a non-durative verb. Then they denied their previous assumption of "for" and turned towards "in", but then they became even more confused as "in" is typical for a future tense. Some of them finally decided to use the future tense (P#1), still some others could not make the logic sound reasonable and decided to say "I returned three days ago" no matter how uncertain they are (#4, #10). Nevertheless, at least it sounded the most possible as they are clear that PC should be a tense related to the past.

As regards the noticing of the mistake and corrections, there are diverse results as well. P#8 is very certain of the meaning of "pour" as "in", therefore, even in the follow-up interview, she refused to change to present perfect tense, however, she chose to correct it as "I would be back in three days", a past tense indicating something will be happen in the future in the past time. Three of them agreed to use "have" (#1, #3, and #20) when they were told that "pour" means "for", while #4 is still being confused after a long discussion with the author. #10 gives a more specific response, he agreed to use "I have...", but only in the form of "I have been back", as "return" is not a durative verb. #12 is the only one who prefers to correct it as "I was back for three days".

V20 : Il est déjà parti.
Standard translation: He has already left /gone.-- perfect aspect present tense

Tenses in translations from 20 participants	Frequency
1. Perfect present	18
2. no aspect past	1
3. no tense marker	1

This sentence is short and easy, and 18 participants out of 20 made the right association. "Déjà" (already) in their mind seems to be a very strong sign for using perfect present tense, as mentioned by P#2. For the only one (P#7) who preferred to use no aspect past tense, actually she knows that PC is equivalent to only two tenses in English, but it was hard for her to make a choice between the two for this case. She said that she was not sure whether the verb "leave" can be used with a perfect present tense in English. As for the one who neither gave any tense marker nor used present tense morphology for the verb, she remarked that is was because she did not pay attention to the tense throughout the whole task, and she is thus a typical case of being affected by the Chinese temporal system in comprehending French sentences.

V21 : Ils ne sont pas descendu de l'avion encore.
Standard translation: They haven't got off the plane yet.-- perfect aspect present tense

Tenses in translations from 20 participants	Frequency
1. perfect present	13
2. no aspect past	7

"Encore" is the time adverbial as distinct as "déjà", whenever they see it, they know that they should use present perfect, therefore 13 of them made the correct assumption of equating this French sentence with perfect present tense in English. For the rest seven who used no aspect past tense, reasons vary from the follow-up interview, but at least we see that all of them finally know that PC can only be equivalent to two possible tenses in English. P#5 said that she tried to see whether perfect present worked or not but found it awkward. P#9 said that she was too used to associate PC with etre as aux. with no aspect past tense in English, especially the negation of this type of PC with "didn't". Therefore the moment she saw "Ils ne sont pas", she started to say "they didn't" without looking at the time adverbial. When she saw "encore" (yet), it was already too late (she was too lazy to correct it), but she knew that she was wrong in the follow-up interview and was willing to correct it. P#12 and #14 gave the similar reason as P#9 for saying "they didn't" in the first place, but they didn't know that "encore" means "yet", instead they thought it was "again". As usual, P#20 did not mark anything on the verb, but she knew that she had neglected everything about tense but focusing on meaning only during the comprehension of French PC.

- **TYPE FOUR : Passe compose with aux « avoir » Equivalent to no aspect past tense**

V22 : Il y a deux semaines, j'ai visité ma grand-mère. Standard translation: I visited my grandma two weeks ago. --no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. I visited…two weeks ago/before.	4
2. There are two weeks, I have visited…	4
3. It is/has been two weeks since I visited…	3
4. There are two weeks, I visited…	3
5. I have visited for…	2
6. I have been visiting for…	1
7. There are two weeks, I will…	1
8. I have visited…ago.	1
9. There are two weeks, I go to visit…	1

Type Four has the lowest accuracy among all types. This is understandable as it takes the same form as "have done" in English, but with totally different reference. Learners even sometimes force themselves to believe the false impression that it should be" have done" even though there is a clear sign for simple past tense (to be elaborated—from students reports—inhibition control). For this specific sentence, the low accuracy may be also due to the incorrect recall of meaning of "il y a" as part of time adverbial.

Even though this sentence is special in that it involves a special grammatical feature in French, still we can see a strong negative item transfer from English. Four participants (#2, #4, #7, #18) did not give a second thought but produced an ungrammatical sentence by word-to-word literally translating from English to French: "There are two weeks, I have visited my grandma." We can see here that there are two verbs in the same sentence without a conjunction and the first verb and second verb have totally unrelated tense markings. The other three (#5, #14, #12) are better, when they see "ai" (have), they did not immediately associate it with its similar form "have" in English, but gave a second thought for no aspect past tense ("I visited…"). Even though it is still ungrammatical in English, it is understandable for them to map "il y a" with "there are" in English, as it was written clearly in their textbook, and they were not taught of the other usage of "il y a" in the past tense meaning "ago". Two participants (#6, #20) who also started the sentence with "there are", strangely associated the main verb with future tense and present tense in English. P#6 said that it was because when she saw "there are two weeks", she felt that it means there is going to be a two-week holiday in the future, so she "will visit" her grandma. However, still four of them (#3, #9, #16, #19), with their logical reasoning, figured out the right form by themselves.

V23 : Vous avez réparé le télécopieur ce matin? Standard translation is: Did you repair the fax machine this morning? –no aspect past tense	
Tenses in translations from 20 participants	Frequency
1. perfect present	16
2. no aspect past	3
3. no aspect present	1

Only 3 out of 20 participants made the correct association for Verb 23. The others chose to use perfect present tense except one who forgot to mark tense. Two reasons can be summarized from the follow-up interview for the dominance of association between English perfect present tense with this verb in the sentence of French PC. The first reason is because of item transfer, the one-to-one equivalence of the word *avez* and English "have" (addressed by participant #1, #5, etc.). As aforementioned, and also pointed out by participant #14, when seeing the verb *avoir*, they need to "try very hard to inhibit the tendency of associating it with the English equivalent word "have" (the isolated words are equivalent but as a grammatical morphological word, they mean different things). They are aware that it is dangerous to make an equivalence of the two words, and they need to "control themselves from doing that". However, this inhibition control sometimes fails as in this sentence. Participant #19 further described this process of thinking: she started out from "have you repaired…" in a flow. When she reached the time adverbial "this morning" at the end of the sentence, she actually stopped for a while and pondered whether it should be "have" or "did". But she was too occupied by this idea of *avoir* being equivalent to "have" and it made her eventually stick to the original translation "have you repaired…". In the mean time, another part of her was "too lazy to correct it and think further" as it "sounds good" to her by saying "have you repaired the fax machine?". The other reason is because of the interrogative form of this sentence. Participant #4 said that after so many years of learning English, "the question form of 'have you done …?' has been deeply engrained in their mind as a memory-based chunk". It has already been automatized which therefore comes naturally without thinking about it when they saw a similar structure. In addition, if they "think back on the Chinese meaning, it is also acceptable to say "have you repaired the fax machine this morning" (*Ni3-Jin1tian1-zao3shang4-xiu1-hao3-le-chuan2zhen1ji1-ma1)*. As for how they see their translation as right or wrong, only 7 out of 17 wanted to make a correction. They believe this is acceptable in English. The time adverbial "this morning" is not a sign obvious enough for them to adopt simple past tense as it is close to "today", for which they would certainly use present perfect tense. Moreover, using present perfect tense has another purpose of "emphasizing the eagerness of knowing whether the person has **finished** the action or not" and it "did have an influence on the present, which conforms to the rules for using present perfect".

V 24 : On a installé Microsoft Office la semaine dernière.
Standard translation: We installed Microsoft Office last week. –no aspect past tense

Tenses in translations from 20 participants	Frequency
1. perfect present	14
2. no aspect past	5
3. no aspect present	1

As for Verb 24, interestingly, it has a little higher accuracy of association than Verb 23. Two participants managed to do it right for V24 but not for V23. When they were asked about the reason in the follow-up interview, they told the researcher that "'last week' is more obvious as a time in the past than 'this morning'", which triggered them denying the intuition of using present perfect tense and changed to no aspect past tense.

APPENDIX K a: Pearson correlation between the three test scores

		English Grammar	TEM-4
English Grammar	Pearson correlation	1	.077
	Sig. (2 tailed)		.722
	N	20	20
TEM-4	Pearson correlation	.077	1
	Sig. (2 tailed)	.722	
	N	20	20

		Task 2	TEM-4
Task 2	Pearson correlation	1	.079
	Sig. (2 tailed)		.713
	N	24	24
TEM-4	Pearson correlation	.079	1
	Sig. (2 tailed)	.713	
	N	24	24

		Task 2	English Grammar
Task 2	Pearson correlation	1	.387
	Sig. (2 tailed)		.062
	N	24	24
English Grammar	Pearson correlation	.387	1
	Sig. (2 tailed)	.062	
	N	24	24

APPENDIX K b: Pearson correlation between STP/TN/STN and Task Two scores

		CTP	Task2
STP	Pearson correlation	1	.556*
	Sig. (2 tailed)		.011
	N	20	20
Task 2	Pearson correlation	.556*	1
	Sig. (2 tailed)	.011	
	N	20	20

*. Correlation is significant at the 0.05 level.

		CTN	Task 2
STN	Pearson correlation	1	-.616**
	Sig. (2 tailed)		.004
	N	20	20
Task 2	Pearson Correlation	-.616**	1
	Sig. (2-tailed)	.004	
	N	20	20

**. Correlation is significant at the 0.01 level.

		TN	Task 2
TN	Pearson Correlation	1	-.611**
	Sig. (2-tailed)		.004
	N	20	20
Task 2	Pearson Correlation	-.611**	1
	Sig. (2-tailed)	.004	
	N	20	20

**. Correlation is significant at the 0.01 level.

APPENDIX K c: Pearson correlation between STP/TN/STN/STN (Eng) and English Grammar test scores

		STP	English Grammar
STP	Pearson Correlation	1	.365
	Sig. (2-tailed)		.114
	N	20	20
English Grammar	Pearson Correlation	.365	1
	Sig. (2-tailed)	.114	
	N	20	20

		STN	English Grammar
STN	Pearson Correlation	1	-.341
	Sig. (2-tailed)		.141
	N	20	20
English Grammar	Pearson Correlation	-.341	1
	Sig. (2-tailed)	.141	
	N	20	20

		TN	English Grammar
TN	Pearson Correlation	1	-.371
	Sig. (2-tailed)		.107
	N	20	20
English Grammar	Pearson Correlation	-.371	1
	Sig. (2-tailed)	.107	
	N	20	20

		STN (Eng)	English Grammar
STN (Eng)	Pearson Correlation	1	-.235
	Sig. (2-tailed)		.319
	N	20	20
English Grammar	Pearson Correlation	-.235	1
	Sig. (2-tailed)	.319	
	N	20	20

APPENDIX K d: Pearson correlation between STP/TN/STN/STN (Eng) and TEM-4 scores

		STP	TEM-4 scores
STP	Pearson Correlation	1	-.103
	Sig. (2-tailed)		.666
	N	20	20
TEM-4 scores	Pearson Correlation	-.103	1
	Sig. (2-tailed)	.666	
	N	20	20

		STN	TEM-4 scores
STN	Pearson Correlation	1	-.016
	Sig. (2-tailed)		.948
	N	20	20
TEM-4	Pearson Correlation	-.016	1
	Sig. (2-tailed)	.948	
	N	20	20

		TN	TEM-4 scores
TN	Pearson Correlation	1	.065
	Sig. (2-tailed)		.785
	N	20	20
TEM-4 scores	Pearson Correlation	.065	1
	Sig. (2-tailed)	.785	
	N	20	20

		STN (Eng)	TEM-4 scores
STN (Eng)	Pearson Correlation	1	-.035
	Sig. (2-tailed)		.882
	N	20	20
TEM-4 scores	Pearson Correlation	-.035	1
	Sig. (2-tailed)	.882	
	N	20	20

APPENDIX K e: Pearson correlation between number of cases of other types of transfer and TEM-4 scores

		Number of lexical transfer	TEM4 scores
Number of lexical transfer	Pearson Correlation	1	-.294
	Sig. (2-tailed)		.208
	N	20	20
TEM-4 scores	Pearson Correlation	-.294	1
	Sig. (2-tailed)	.208	
	N	20	20

		Number of transfer in tense	TEM-4 scores
Number of transfer in tense	Pearson Correlation	1	-.110
	Sig. (2-tailed)		.645
	N	20	20
TEM-4 scores	Pearson Correlation	-.110	1
	Sig. (2-tailed)	.645	
	N	20	20

		S	TEM-4 scores
Number of syntactic transfer	Pearson Correlation	1	-.247
	Sig. (2-tailed)		.295
	N	20	20
TEM-4 scores	Pearson Correlation	-.247	1
	Sig. (2-tailed)	.295	
	N	20	20

APPENDIX K f: Pearson correlation between positive syntactic transfer (SP) and STP/STN

		SP	STP
SP	Pearson Correlation	1	.647**
	Sig. (2-tailed)		.002
	N	20	20
STP	Pearson Correlation	.647**	1
	Sig. (2-tailed)	.002	
	N	20	20

**. Correlation is significant at the 0.01 level.

		STN	SP
STNs	Pearson Correlation	1	-.487*
	Sig. (2-tailed)		.029
	N	20	20
SP	Pearson Correlation	-.487*	1
	Sig. (2-tailed)	.029	
	N	20	20

*. Correlation is significant at the 0.05 level.

APPENDIX K g: Comparison of the overall performance in L3 comprehension between the two L2 proficiency groups

Group Statistics

	grouped according to TEM4 scores	N	Mean	Std. Deviation	Std. Error Mean
Accuracy	High	10	-27.3000	4.54117	1.43604
	Low	10	-34.4500	8.33150	2.63465

Independent Samples T-test

		Levene's Test for Equality of Variances		t-test for equality of means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Accuracy	Equal variances assumed	4.945	.039	2.383	18	.028	7.15000	3.00060	.84597	13.45403
	Equal variances not assumed			2.383	13.914	**.032**	7.15000	3.00060	.71061	13.58939